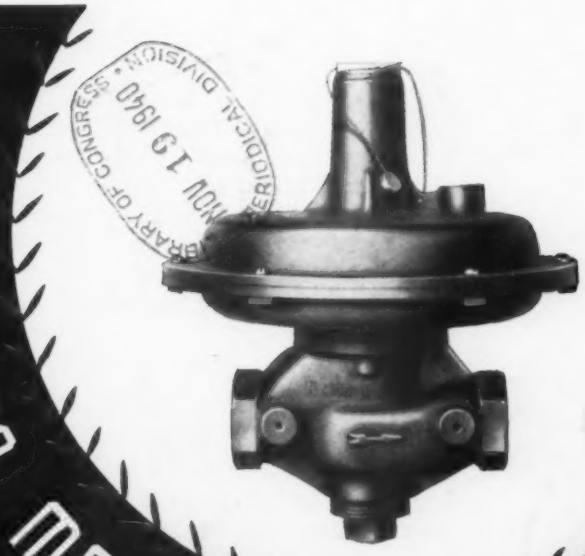
AMERICAN GAS JOURNAL

OCTOBER 1940

☆ Down through the decades REYNOLDS Engineers have worked unceasingly to build Gas Regulators safer and more accurate. Every item, every part used in Reynolds Regulators has met rigid specifications. Every Regulator built by Reynolds has been tested at the factory before it is shipped . . . which explains why for nearly half a century Reynolds has held the lead in the development of Gas Control equipment.

BUILT TO MATCH AN IDEAL



Reynolds maintains designing, engineering and research staffs which have at their command unequalled production facilities. Reynolds is prepared to give expert co-operation in solving Gas Control problems.

REYNOLDS

BRANCH OFFICES

423 Dwight Building
Kansas City, Missouri

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REPRESENTATIVES

Eastern Appliance Company
Boston, Massachusetts

Wm. A. Ehlers
No. 268 Park Street
Upper Montclair, N. J.

GAS REGULATOR COMPANY
ANDERSON, INDIANA, U. S. A.

RECOGNIZED · GAS · CONTROL · SINCE · 1892

Research
PROMOTES INDUSTRIAL PROGRESS

Yesterday:

The late George Westinghouse founded the firm that is now the Pittsburgh Equitable Meter Company in 1886. He combined research and sound engineering principles with a masterful inventive ability. His early efforts in the field of gas measurement and control provided the nucleus around which EMCO Meters, Regulators and accessory equipment have been, over a 50 year period, continuously improved and expanded.

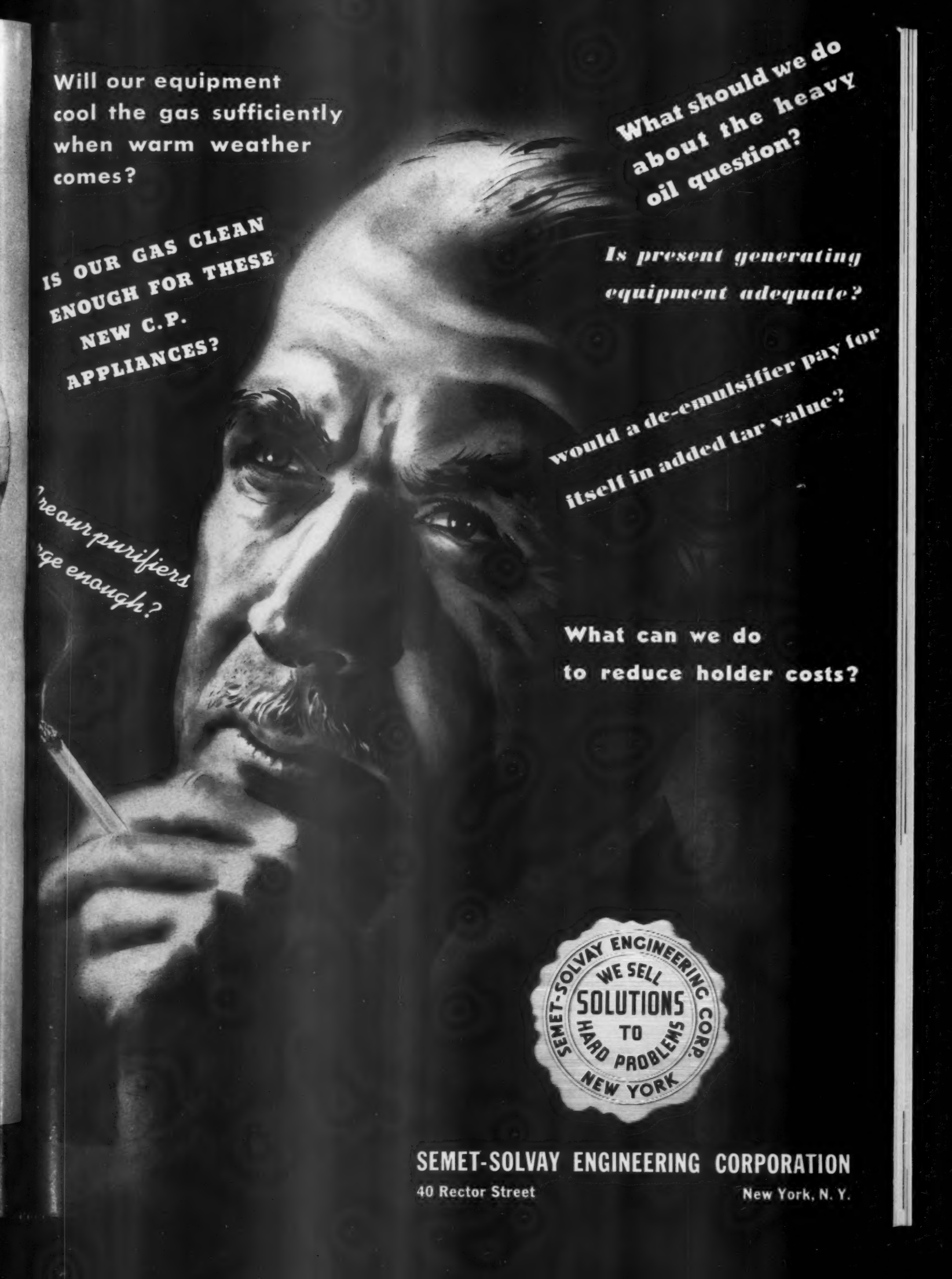
Today:

That the inventive and development heritage of the founder has been perpetuated is readily apparent in the accomplishments of the EMCO organization to date. As various measurement and control needs arose in the expanding gas industry, EMCO engineers and researchers were able to provide the equipment to fill them. Such outstanding developments as the EMCO Type 38 Orifice Meter, the EMCO-RECTOR, the EMCO-McGaughy Integrator, the EMCO "1001" Regulator, and the EMCO Pilot Loading Regulator are today available to meet the current requirements of the industry. Many innovations and improvements in the construction of older basic products have been made to meet today's demands for more accurate measurement and control. Every aid of modern science is being utilized to provide the best possible value.

Tomorrow:

The wonders of tomorrow will come from the work of today's scientists. Already in the gas industry, future problems involving longer lines, higher pressures and heavier loads are being studied. In EMCO laboratories and on EMCO drawing boards are now being evolved the measurement and control equipment which will be needed to serve the expanding demands of this great industry. In addition to company operated laboratories, the Pittsburgh Equitable Meter Company supports a meter fellowship at the world-renowned Mellon Institute. Scientists here are constantly searching for better metering methods and materials. The results of such research are incorporated in EMCO products. Search and research are used to maintain leadership.

PITTSBURGH EQUITABLE METER COMPANY
MERCO NORDSTROM VALVE CO.
NEW YORK BUFFALO PHILADELPHIA KANSAS CITY TULSA LOS ANGELES
Main Offices - PITTSBURGH PA
DES MOINES CHICAGO COLUMBIA MEMPHIS OAKLAND HOUSTON


Will our equipment cool the gas sufficiently when warm weather comes?
What should we do about the heavy oil question?
IS OUR GAS CLEAN ENOUGH FOR THESE NEW C.P. APPLIANCES?
Is present generating equipment adequate?
would a de-emulsifier pay for itself in added tar value?
re our purifiers ge enough?
What can we do to reduce holder costs?
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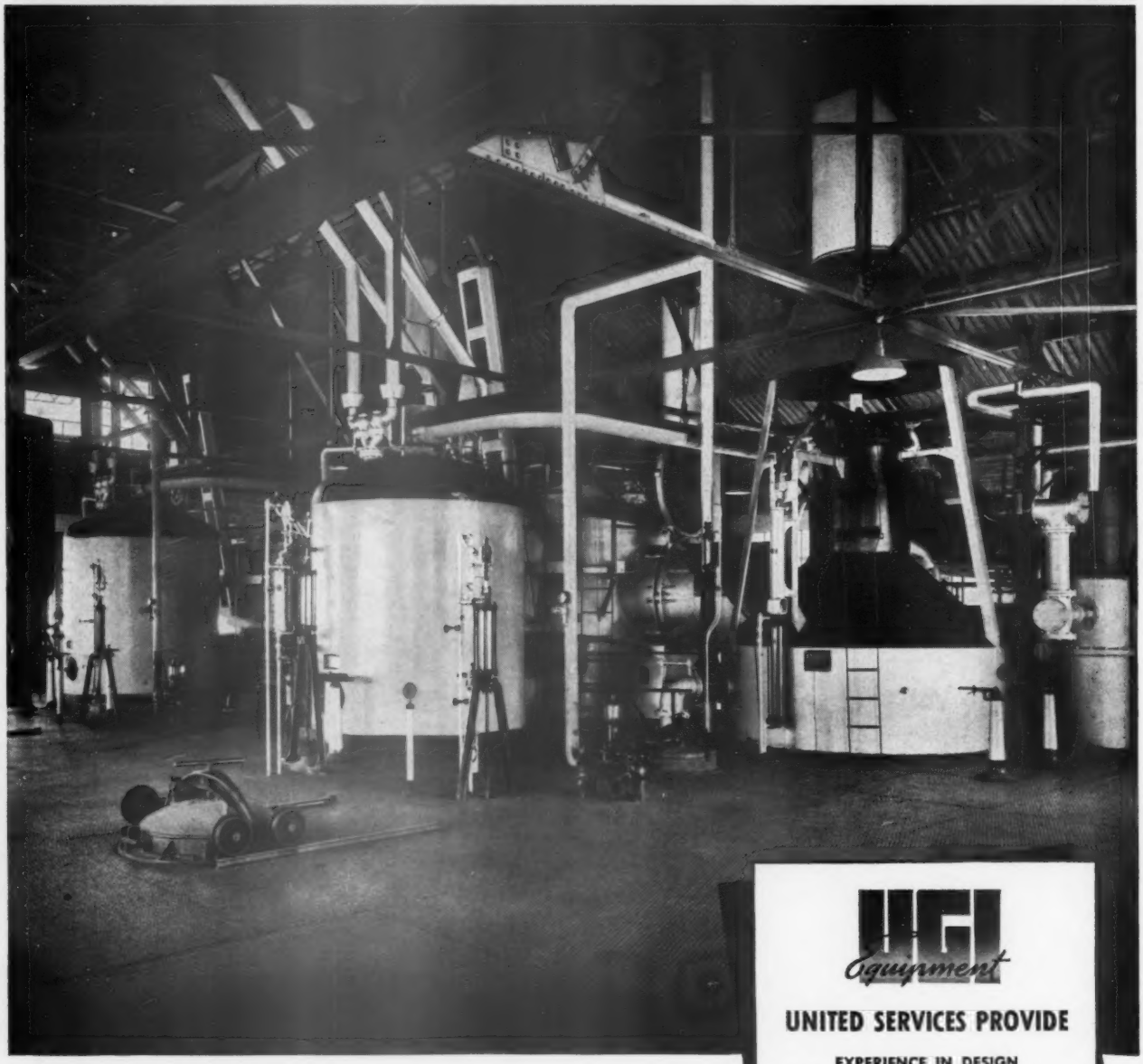


UGI Equipment

UNITED SERVICES PROVIDE

EXPERIENCE IN DESIGN
United has over 50 years experience in gas plant design.

EFFICIENT APPARATUS
United has pioneered major developments in water and coal gas production.

ECONOMICAL CONSTRUCTION
United has large well organized forces for gas plant and general construction work.

EXPERIENCE IN OPERATION
United has experienced plant operators for securing most efficient results.

LONG EXPERIENCE WITH THE U. G. I. HEAVY OIL PROCESS has demonstrated that high efficiencies are obtained, reforming is carried on with economy insuring maximum benefit from low oil prices and specific gravity of the gas is always under operating control.

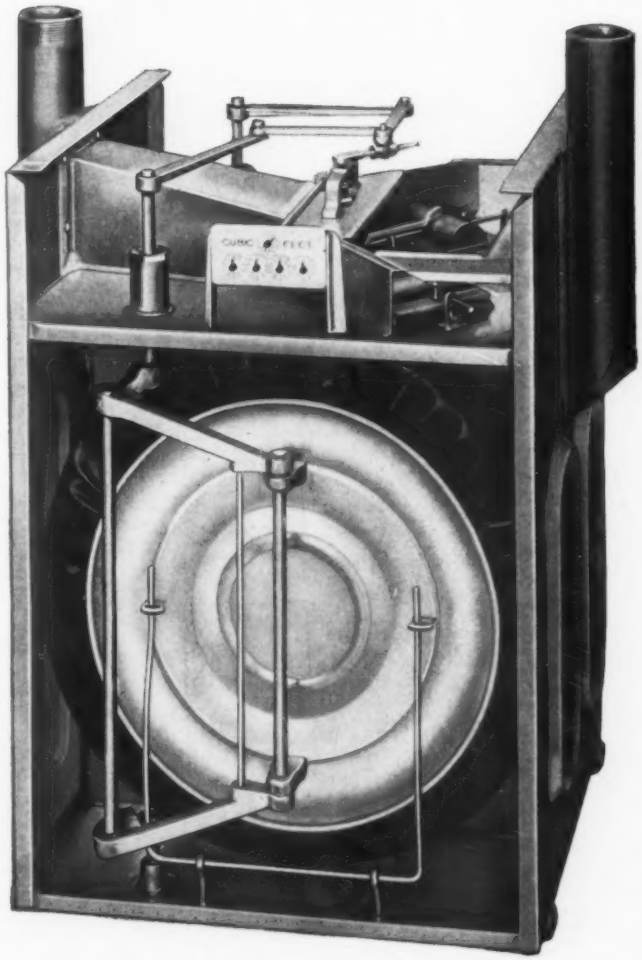
THE U. G. I. HEAVY OIL PROCESS has proven most adaptable to the individual requirements of the many plants in which the U. G. I. Heavy Oil Process is used. This process is now installed in over one hundred water gas sets.

UNITED ENGINEERS & CONSTRUCTORS INC

NEW YORK PHILADELPHIA CHICAGO

SUPERIOR GAS METERS

In these days of club cellars and limited industrial space, there is a demand for a meter which will operate quietly and accurately and yet occupy as little space as possible. With this in mind, *SUPERIOR* has developed a meter especially for the industrial and house-heating loads. It is the new, improved Superior "C", combining the large capacity of the "A" meter, the simplicity and slow motion of the "B" meter with many exclusive features.



Fewer moving parts, unusually heavy flag construction, new, quiet-acting valve design, high ratio of capacity to space occupied, are but a few reasons why the Superior "C" is the modern method of efficient, accurate and silent metering of large loads whether intermittent or continuous. A glance at the cut on the right will show you the simple but rugged construction that speaks for itself.

You will find a Superior "C" meter to serve your purpose for all sizes of industrial and house-heating loads. They are made in five sizes, from 600 cu. ft. per hr. to 7500 cu. ft. per hr.

Wet Test and Demonstration Meters
Diaphragms—Service Cleaners
Provers—Meter Repairs

A word about our other meters:—

Every SUPERIOR Meter from 5B up is built upon the tradition that quality comes first. They are constructed from the best of materials by an experienced staff of meter mechanics. The name, SUPERIOR, means more accuracy, less trouble, and fewer expensive repairs. All sizes, 5B to 60C.

Our bulletin, #23, gives full facts about SUPERIOR Meters and shows why we enjoy an increasing volume of repeat orders from most of the large utilities. Write for it.

SUPERIOR METER COMPANY, INC.

167 41st Street ***Brooklyn, N. Y.***

AMERICAN GAS JOURNAL, October, 1940. Vol. 153, No. 4. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa. Executive and Editorial offices at 52 Park Place, New York, N. Y. Entered as second-class matter, October 7, 1928, at the post-office at East Stroudsburg, Pa., under the Act of March 3, 1879. Printed in U. S. A.

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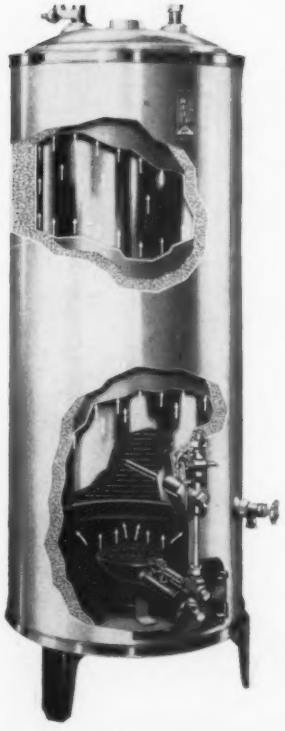
Twelve Hundred Series

Accepted!

STARTED from scratch in 1938. Now a big seller,—a fine load-builder and load-protector. The RUUD Twelve Hundred series with 20-year guaranteed tanks of solid, rust-proof, age-proof and abuse-proof MONEL, is the "SOMETHING NEW TO TALK ABOUT" that your salesmen have been asking for.

In three short years, RUUD-MONEL has been ACCEPTED as the ideal combination of *top-quality, perfect service and low cost* in an automatic gas water heater by gas companies, plumbers, architects, builders, builder financial agencies, governmental agencies, home builders, home buyers and home owners.

RUUD-MONEL comes to you with complete selling equipment,—magazine advertising, newspaper mats, radio transcriptions, 24-sheet posters, indoor and outdoor displays, sales educational material, sales kits—everything you need to set up a full selling program. Full details on request.



PINE ROOM, HOTEL TRAYMORE
A.G.A. CONVENTION
ATLANTIC CITY, N. J.

Visit the Pine Room for the advance showing of the RUUD advertising and sales promotion program for 1941, including increased national magazine advertising for spring.

RUUD MANUFACTURING COMPANY
PITTSBURGH, PENNSYLVANIA

SELL RUUD-MONEL . . . IT'S EASY TO SELL

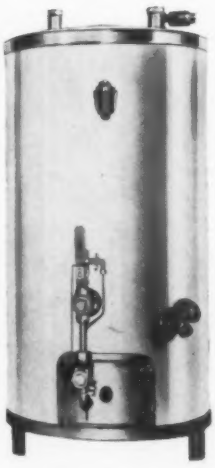
RUUD
Four Hundred Series
MONEL
Coming Fast!

THE RUUD Four Hundred series taps a new market, —a market for many years highly resistant to GAS. RUUD meets all the requirements of this market,—*made-to-measure service, reasonable first cost, and low fuel cost,* —with the new Four Hundred series, built with the Ruud chassis and the famous 20-year guaranteed Monel tank.

The market is the modern small family that uses 25, 40 or 60 gallons of hot water a day and these three most numerous requirement brackets are covered by Ruud Nos. 425, 440 and 460. Collateral markets are small commercial and industrial uses.

The end of competitive fuel dominance is in sight, for the Ruud-Monel Four Hundred series is COMING FAST!

Prove your own market by making test installations in the field. Much data is on hand to help you. Write for full details.



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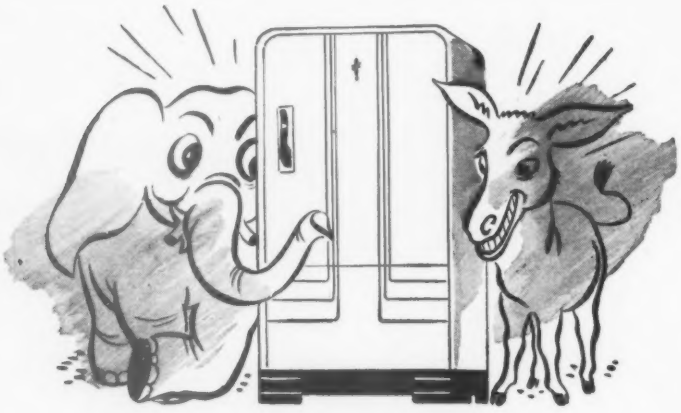
See the full selling equipment of RUUD-Monel Automatic Gas Water Heaters in the Pine Room, open throughout the American Gas Association Convention.

RUUD MANUFACTURING COMPANY
PITTSBURGH, PENNSYLVANIA

SELL RUUD-MONEL . . . IT'S EASY TO SELL



All parties agree on this . . .

GAS REFRIGERATION GETS THE VOTE

Customers vote for its silence and dependability . . . Gas Companies for the way it helps them sell "Gas for all 4 Jobs"

FROM outside sources . . . from polls and surveys conducted by impartial organizations . . . comes proof that there is a definite and increasing trend in favor of Gas Refrigeration.

Every year, more and more people who've had experience with other makes of refrigeration are changing to Servel Electrolux. They've learned that its freezing system with no moving parts is the only one that can assure them of permanent silence, continued low operating cost and the other advantages they want.

And among people buying their first automatics, the experience of those who've tried others is tipping the balance in favor of Servel in more and more cases.

Gas Company executives, likewise, are increasingly favoring a more vigorous promotion of Gas Refrigeration, because they find its widening acceptance and unusual customer appeal make it an ideal appliance with which to wedge open a greater consumer use of gas service.

By getting people who are cooking with gas to add Gas Refrigeration in their kitchens, executives find they can protect their present gas load, stimulate the sale of other gas appliances, increase load without making added capital investment, publicize gas as the modern fuel and promote the use of "Gas for All Four Jobs."

Gas Refrigeration:

- **Protects Your Present Gas Load**
- **Builds New Load without Added Investment**
- **Stimulates the Sale of Other Gas Appliances**
- **Publicizes the Modernity of Gas**
- **Promotes "Gas for All Four Jobs"**

Wins Good Will for Gas and Gas Service

The
SERVEL
ELECTROLUX
Gas Refrigerator

More Profit in Blaw-Knox *Conditioned* GAS!

Can you measure the loss of good will when service fails due to dust in the lines? How many men, how many trucks, for example, must you assign to answer service calls? Blaw-Knox Gas Conditioning is the answer, providing—at low cost—a positive insurance against service interruptions due to foreign matter in the gas; protecting your equipment from the erosive effects of entrained dust with fully engineered gas conditioners which will do the kind of a job you want. Bulletin No. 1578 tells you what Blaw-Knox Gas Conditioning equipment does and why it is preferred by leading operating engineers the country over. Ask for it.

Up go sales of appliances, down go service costs when GAS does its job unfailingly. As engineers know, nothing but CLEAN gas is dependable . . . especially when used with modern appliances which have smaller apertures and more delicate mechanisms.

A few of the many advantages of Blaw-Knox Gas Conditioning

1—High capacity; gives full value per dollar invested.

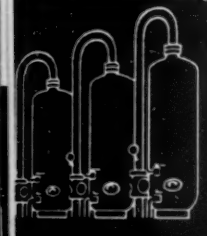
2—Gas is thoroughly cleaned, no half measures. Dust and other foreign matter is dynamically forced into intimate contact with washing liquid.

3—Delivers perfectly clean, dry gas (if desired, equipment will resaturate with oil or water vapor).

4—Pressure losses cut. Very little loss in contacting and separating sections.

5—Dust and dirt are completely removed from gas flow.

6—Blaw-Knox Gas Conditioners are the result of many years' research and experience in dust removal and separation of liquids from gas.



BLAW-KNOX
GAS CONDITIONERS

BLAW-KNOX DIVISION of Blaw-Knox Company · FARMERS BANK BLDG., PITTSBURGH, PA.

Why not Investigate . . .

This Low-Cost Method of Reducing Unaccounted-for Gas Loss

"Carboseal" anti-leak is now being used by over 250 gas companies for reducing leakage in packed bell-and-spigot joints in systems distributing dry gases. Hundreds of reports received from these companies confirm the effectiveness and permanence of "Carboseal" anti-leak treatment. The costs summarized in the table at the right have been taken from these reports. They include both material and labor costs and are typical of general field experience.

How "Carboseal" Anti-Leak Works

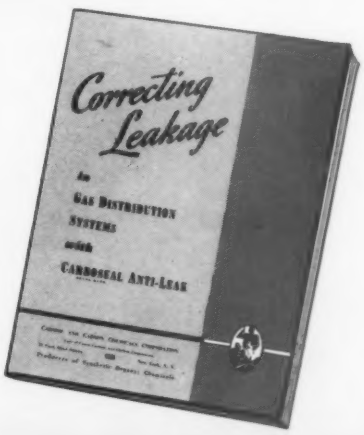
When dry gas is substituted for wet gas, the water and oil in the joints evaporate, the packing is dehydrated and shrinks, and leakage results where the lead or cement caulking has loosened due to expansion or contraction.

"Carboseal" anti-leak swells the packing and keeps it wet indefinitely. This scientifically developed liquid is introduced into the mains at the high points and flows over the joints by gravity to the drips where the surplus is recovered for re-use. It can also be sprayed into the mains by means of a hose. Both of these methods are used without interrupting gas service, and without making expensive joint excavations.

Diameter of Main	*Length of Main, Feet*	*Method of Treatment*	*Actual Cost Based on 3-in. Equivalent Main*	
			Dollars per Mile	*Cents per Joint**
3 in. equiv.	181,632	Gravity	145	29
4 in.	1,200	"	113	23
4 in.	11,900	"	135	27
3 in. equiv.	43,800	"	180	36
3 in. equiv.	544,525	"	383	77
4 in.	2,332	"	135	27
4 in.	22,200	Hose	331	66
4 in.	26,250	"	279	56
6 in.	5,576	"	237	47
4 in.	154,954	"	440	88
6 in.	16,400	"	318	64
10 in.	4,925	"	230	46
12 in.	2,000	"	184	37
16 in.	1,200	"	173	35
4 in.	203,404	"	407	81
6 in.	23,976	"	293	59

*Based on 500 joints per mile.

Get a Copy of this New Book!



It will pay you to send for a copy of this book which contains in compact form all the essential facts about "Carboseal" anti-leak, the methods of application, comparative costs, and results obtained. Possibly this inexpensive and economical method of correcting joint leakage can be used to advantage in your system. A request on your company letterhead will bring you the book, without obligation.

CARBIDE AND CARBON CHEMICALS CORPORATION

Unit of Union Carbide and Carbon Corporation

30 East 42nd Street UCC **New York, N. Y.**

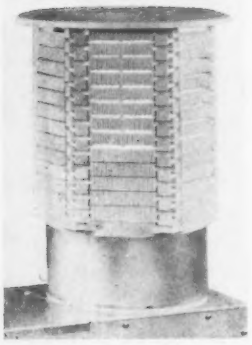
PRODUCERS OF SYNTHETIC ORGANIC CHEMICALS

The word "Carboseal" is a registered trade-mark of Carbide and Carbon Chemicals Corporation.

THE REPUBLIC LINE

EACH PRODUCT DESIGNED TO SATISFY A DEFINITE NEED

We do not make every type of gas appliance. Our engineers concentrate exclusively on products that expand the market for Gas Service.

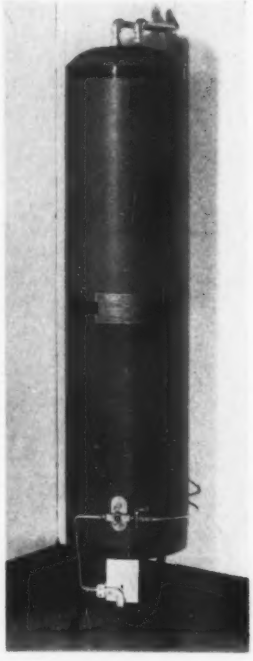


← THE REPUBLIC BURNER — NOTHING ELSE LIKE IT.

Combines the proven performance of the Republic Radiant Distributor with the most important recent improvement in gas heating — Gradient-Heet. Republic operation is no longer "Stop and Go."

← THE REPUBLIC HUMIDIFIER — NOTHING ELSE LIKE IT.

An independent gas-fired unit designed to open a new and profitable market for the gas industry. Easy to install—easy to buy. Automatic flushing available for hard water areas.

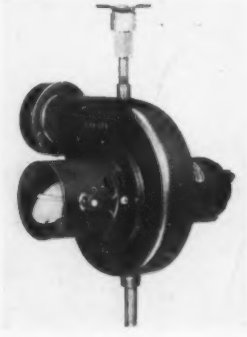


THE REPUBLIC CONVERSION WATER HEATER → NOTHING ELSE LIKE IT

The most profitable load-builder for the gas industry. Makes automatic water heating appealing to all your customers.

THE REPUBLIC EXHAUSTER—NOTHING ELSE LIKE IT →

An exhauster designed specifically for the evacuation of gas combustion products, rugged, quiet, easy to install, and available with proper controls for reliable and safe operation.



AUTOGAS COMPANY

2240 DIVERSEY **CHICAGO, ILL.**

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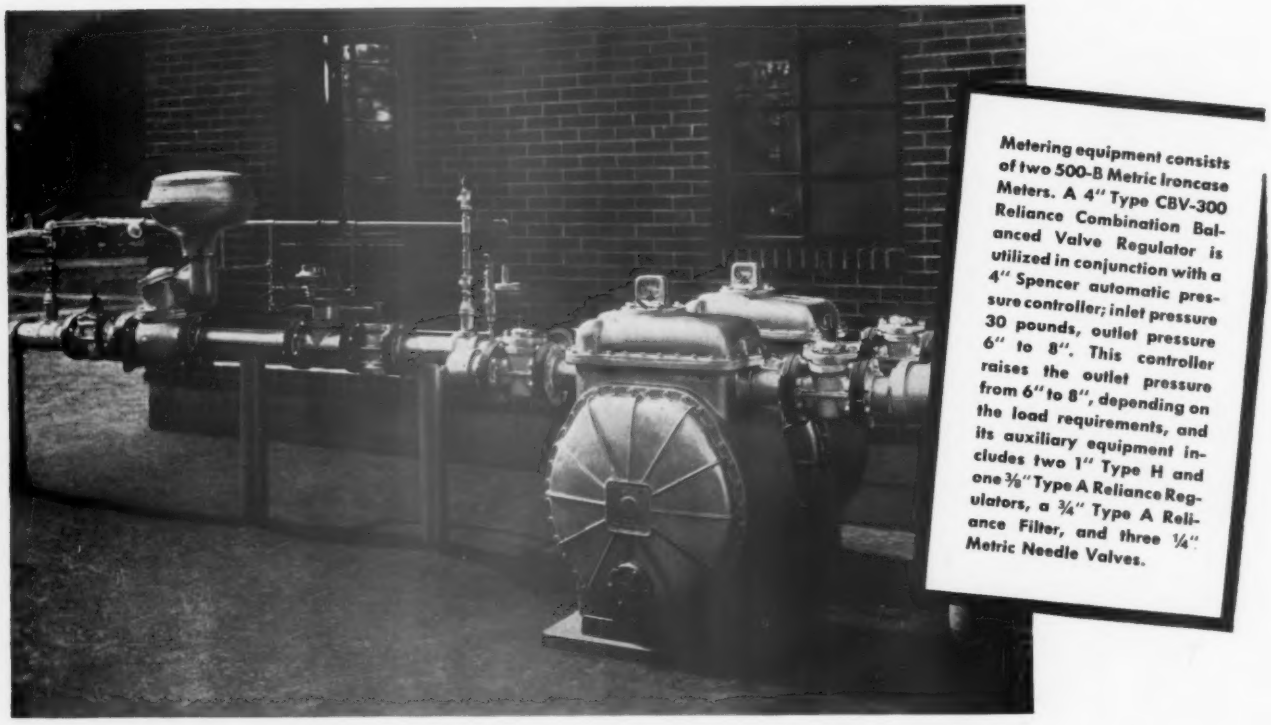
ANOTHER ALL-AMERICAN JOB

This model new master meter station was built by a leading gas company in the South, to measure gas to a large construction operation.

The meters and regulators specified for the installation were American Meter Company products, bearing the METRIC-AMERICAN or RELIANCE-AMERICAN trademark.

This gas company is exacting in its specifications on all counts relating to instrument accuracy, low maintenance, and long-term values. It is impressed only by actual performance and cost records.



Metering equipment consists of two 500-B Metric Ironcase Meters. A 4" Type CBV-300 Reliance Combination Balanced Valve Regulator is utilized in conjunction with a 4" Spencer automatic pressure controller; inlet pressure 30 pounds, outlet pressure 6" to 8". This controller raises the outlet pressure from 6" to 8", depending on the load requirements, and its auxiliary equipment includes two 1" Type H and one 3/8" Type A Reliance Regulators, a 3/4" Type A Reliance Filter, and three 1/4" Metric Needle Valves.

METRIC METAL WORKS • ERIE, PA.

AMERICAN METER COMPANY

INCORPORATED (ESTABLISHED 1836)

1487

AMERICAN GAS JOURNAL

OCTOBER 1940

VOLUME 153 No. 4

Field Engineering Guide Notes For Gas Distribution

By
Philip H. Kline
Knoxville, Tenn.

MOST engineering work for construction involves rapid layout and accurate reporting of data for owners' and constructors' use. This is particularly true during the installation of substructures such as gas distribution systems. In that type of work the inconvenience to the public during construction necessitates the fastest possible schedules; and when the work has been completed, it is covered, repaved, and is not readily accessible for inspection, repair or operating information. The following notes have been condensed from a manual guide pertaining specifically to the treatment of field problems so that the job may progress smoothly, and so that permanent records will be in good shape.

Field Requirements and Preparation

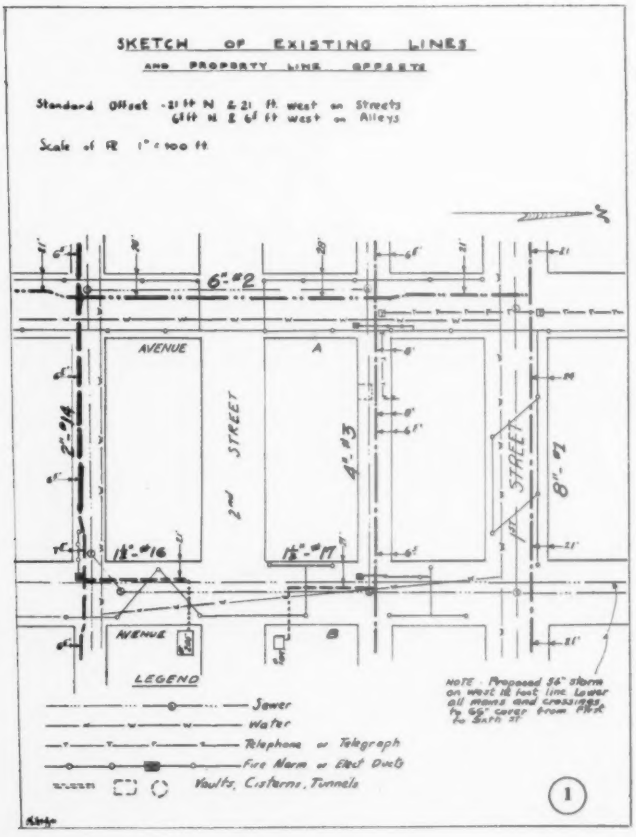
Local Variations

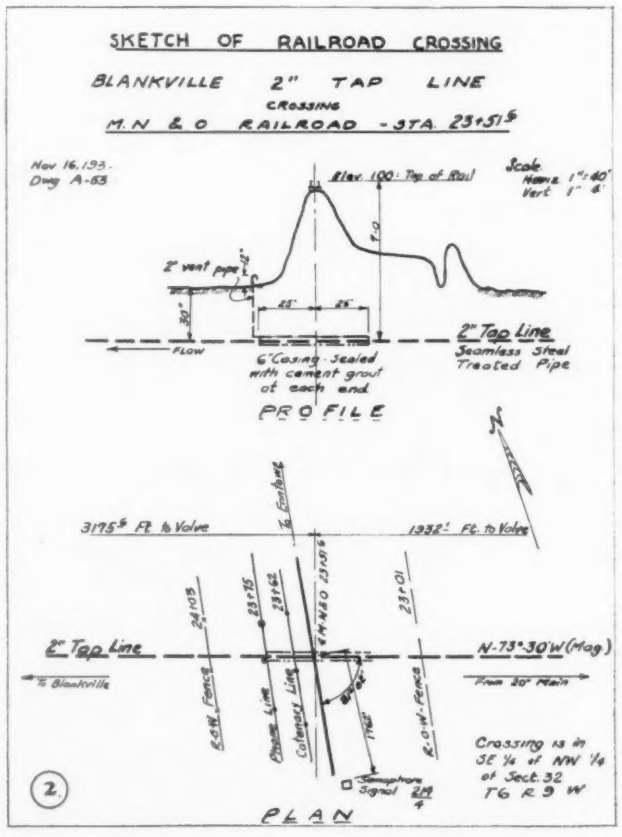
A check of the proposed system installation layout before construction starts will provide an opportunity to avoid many difficult situations. Houses located on street corners may block off possible service to an adjacent building so that a main extension might be required, or so that a provision must be made for passage over private property. It is sometimes possible to reduce the number of valves needed by a close study of shut-off and shut-in arrangements so that service may be maintained on important networks. At times, test risers, drips, blowoffs, or disconnect couplings are inadvertently omitted from the original layout. Existing or proposed paving may affect the routing of mains or services; or soil conditions may indicate special protection, requiring casings, brackets, hangers, boxes, etc. The probability of electrolysis activity may be observed from information concerning direct current railways, variances in soil potential, or other substructures and services that may be sources of stray currents. The cooperation of city authorities will assist in making usable records available and may indicate local preferences of location of the mains. Such preliminary work will go far to clarify later inspection and to comply with franchise conditions. Another possible result of a preconstruction check is to determine the order of construction on various streets and alleys. Often proposed structures or unfinished streets or developments may be taken care of at this time. The general and detail engineering layout needs must be discussed with the construction superintendent who will point out new crews that may need "breaking in" to save later engineering attention. The requirements for materials delivery, inspection, inventory, and pipe treating operations will have to be decided; and a close cooperation must be developed for clean-up items such as curb boxes, re-excavation, test records, and service installation routines and changes.

Review of Existing Lines

Substructures, existing or proposed, must be thoroughly explored and may be laid out on a composite map of the job. (Illustration No. 1.) The location of public utility and municipal underground lines can generally be ascertained from their owners. They will usually cooperate in furnishing data from their records, although field exploration is sometimes needed. The source of all such information should be recorded. Maps are sometimes available from insurance underwriters as well as from the city and private owners and from court house records.

Fire alarm, telephone and power cables are of first importance and should be marked clearly on the ground. During construction, any cuts or scratches into the covering of such cables from either machine or hand digging must be immediately reported. Avoid paralleling existing water lines with the new gas line layout by keeping the new lines at least three feet, and preferably six feet from the deeper laid water mains.





These deeper lines require a greater depth of excavation than the gas lines and generally a wider opening, which might expose and damage the gas lines. Watch out for valve boxes and manholes on dirt roads where dust or mud may cover them and where indications of an existing line might be missed. To facilitate construction of the gas line when curving around present lines, avoid sharp bends that make awkward field installation and are liable to cause leaks in the pipe carrying the gas.

To record the location of new lines, all installations should be referenced to city monuments, section corners, and major structures in that order of importance, as found practical. Pipes extending in suburban or outlying districts may be located by surveys that connect to city lines or by stadia measurements or triangulation "shots" on some prominent steeple or chimney. Any property purchased or any easements secured must be carefully surveyed and recorded by courses and distances. Caution should be exercised in accepting the location of property lines from information apparently established by shanty rows, tree lines, walks or random pavements. If in doubt, keep the new ditch line well in the center of the thoroughfare and be sure and record the method of estimating such a centerline. Questions from private owners as to their personal lot boundaries should be referred to private surveyors or the City Engineer.

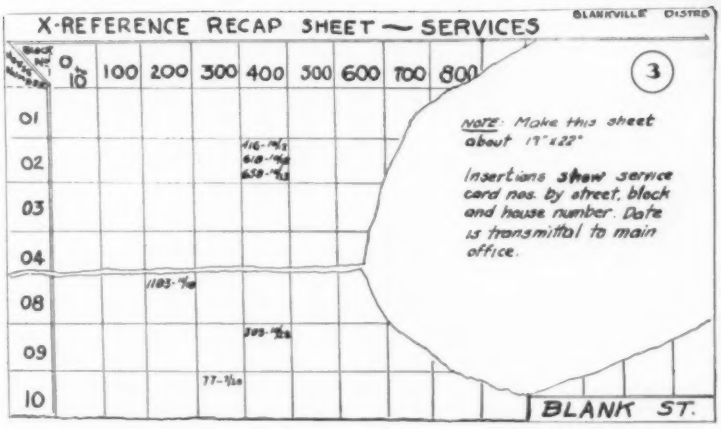
Full data must be secured for highway or railroad crossings, tieing the point of crossing to well established markers such as mile posts. A sample "Sketch of Railroad Crossing" (No. 2) shows the type of information usually needed for permits. Highway crossing drawings will show the route number of the highway, the distances to city limits or to important intersections or other easily identified points. On bridge crossings, state by whom the structure is owned, the type of truss, girder or suspension, and the proposed method of supporting the gas pipe. Submarine pipe crossings require information as to the soil of the river bed, rate of stream flow, overflow data, and the possibility of unsatisfactory chemical content of the stream. All temporary bridges or fills placed on city streets must be completely arranged with the fire Department authorities for emergency access and routing of fire fighting equipment.

Pavement to be cut should be ascertained well in advance of construction. The city specifications for various types of bases and surfaces, and samples of pavement actually removed may be compared and referred to for later repaving standards. In this connection bear in mind that the proper bonding of new pavement to unbroken portions is apt to be a serious point of contention. The facilities of plant and material (or contractors) available for replacement of paving will be ascertained. Suitable disposal dumps within easy hauling distances must be located for waste piles of concrete or asphalt that has been cut and removed.

Layout

A one line drawing of all city mains may be made showing paved streets by light shading. Valves and other fittings to be installed should be indicated by large clear symbols. If time is available a preliminary field survey with definite transit and chainage measurement is desirable and the field notes taken can be used to insert quickly new pipe data as the line is laid. These notes can then be tied into other records and final maps. At times however only crayon or stake markings need be made to start excavation, leaving all final recording to be done during or after construction. The engineer must keep in close touch with excavating forces to assure them that proper offset distances and substructure data is in their hands. He should recommend that chalk lines be strung for machine or hand digging of pipe trenches.

Pavements cut should be specifically checked for minimum breakage. Under rapid layout and installation programs it will be found that the recording crew is unduly rushed in sketching surface and subsurface conditions in congested city areas. Since much of this information must be tied into actual pipe line pluses it has been found the pre-sketching of important surface culture may be a satisfactory solution if the work is properly outlined and experienced instruction is given. Ample room on such notes must be provided for details of construction that will have to be inserted later.



In order that the field engineer may keep track of individual service installation records and their schedules and progress, a system of service cards filed in number order will serve as the chief control. Where a new system involves unmapped or uncatalogued services, a recap sheet for quick reference may be made, as shown in the accompanying illustration. (No. 3.) One such sheet is made for each street, and the service cards as received are entered by their number under the house number column.

Recording Permanent Data

Standard Field Notes

In the illustrations shown, the right and left sides of a typical field loose leaf note book sheet carry descriptive and graphic information concerning the new line and surrounding conditions. (Nos. 4 and 5.) Note that ample pipe line pluses are given to indicate the measurements along the new mains. Magnetic bearings may be recorded as a check of angles turned on the line. Cross references to other lines, equations of chainage stations met or crossed, and relative depths of other substructures must be shown. Avoid crowding the main notes by using auxiliary references to extra sheets that show complete details of such matters as:—

a. Description and illustrations of all usual fittings.

b. Key of symbols, and a general index of the various notes describing the entire job.

c. Special pipe wrapping, coating or treating arrangements used.

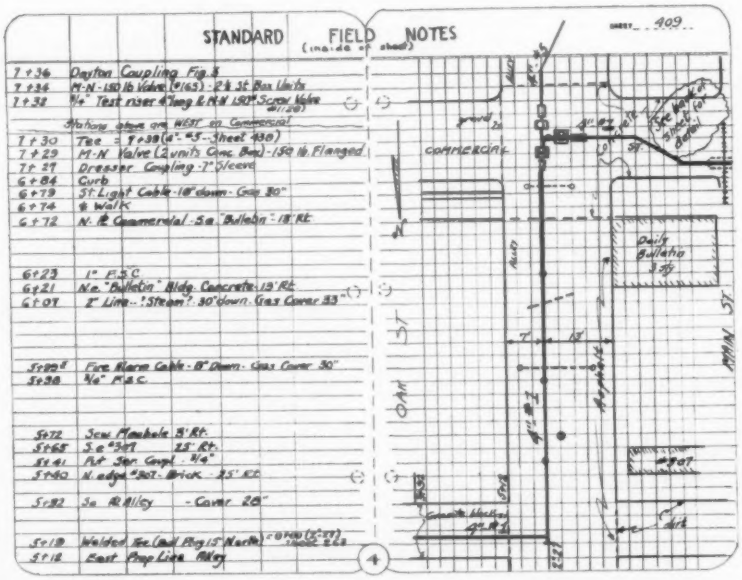
d. Computations of survey points, property lines, slope distances, etc.

e. Reports of solid rock, unwatering, construction progress.

f. Time studies of men or equipment, methods to perform the work, and construction quantities encountered.

g. Service inquiries by new and prospective customers, follow-ups.

A "Field Notes Correction Sheet" (No. 6) is designed to assure investigation of the major questions encountered when checking field notes. Errors or omissions found in the notes may be indicated under the particular heading on the sheet that needs attention. This allows field in-

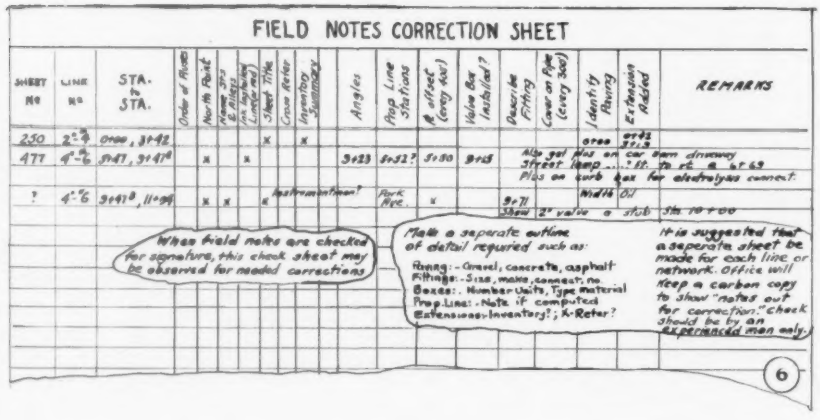

STANDARD FIELD NOTES
(inside of sheet)
SHEET 409
7+36 Dayton Coupling Fig 3
7+34 M-N-150 lb Valve (9165) - 2 St Box Units
7+32 3/4" Test riser & Plug & M-N 150# Screw Valve
Stations shown are WEST on Commercial
7+30 Tee = 7+39 (6"-45°-Sheet 430)
7+29 M-N Valve (2 units Conc. Box) - 150 lb Flanged
7+27 Dresser Coupling - 7" Sleeve
6+84 Curb
6+79 St Light Cable - 18" down - Conc 30"
6+74 4 Walks
6+72 N. 12 Commercial - So "Bulletin" - 18' Rt
6+23 1" P.S.C.
6+21 No. "Bulletin" Bldg. Concrete - 13' Rt
6+07 2" Line - "Steam" - 30" down. Gas Cover 33
5+92 Fire Alarm Cable - 8" Down - Conc Cover 30"
5+38 3/4" P.S.C.
5+72 Sew Manhole 5' Rt
5+65 So #307 25' Rt
5+41 Pot Sta. Gauge - 3/4"
5+40 N. edge #307 - Brick - 25' Rt
5+32 So 12 Alley - Cover 20"
5+19 Welded Tee (and Plug 15' North) - 8"x4"x8" (2"x2")
5+18 East Prop Line Alley
COMMERCIAL
ALLEY
MAIN ST
Daily Bulletin 3 Sty
#307
4
STANDARD FIELD NOTES
OFFICE FILE
DATE 8/19-1938
SHEET NO. 409
BLANKVILLE DISTRICT
4" LINE #1
Sta 5+12 to 9+65
ALLEY EAST OF MAIN
From Alley north of Commercial
To Commercial
&
COMMERCIAL
From Alley East of Main — westward
INSTRUMENT T.H.
RECORDER T.H.
CHAINMEN J.M.C. #1405
REMARKS
INVENTORY (Sta 5+12 to 9+65)
4" Pipe 453 Ft
M-N Valves #165-4" 2
Dresser Style 38-4" 1
Dayton Fig. 3 -4" 1
Nipple 3/4" 1
M-N Valve Sq. #128-3/4" 1
P.S.C. 3/4" 8
P.S.C. 1" 1
Casing - 8" 50 Ft
Vent - 2" 32 Ft
Street Box 2
Curb Box 2
#6 R.C. Stranded Copper Cable 20 Ft
5

vestigation of the recorded data without defacing the original notes.

Special Notes and Records

Many other notes are accumulated during the job, and each type of record should carry specific numbering and grouping. Paving record notes bearing the prefix letter "P" will have stationing tied into the standard notes. Miscellaneous notes may be prefixed "M" and may include random surveys of land parcels, boundary lines, crossings, extensions, alternate route surveys, regulator or odorizing installations notes, inventories, etc. Notes pertaining to subcontracts such as water used for backfilling, hauling distances and tonnages, service plastering, and required electrical work should be kept for verification of invoices. Special information pertaining to weights of shipment and quantities of pipe and fittings, conversion of tar used in barrels to quantities in pounds, welding rods in pounds and type, protective wrapping in bundles and square feet; these are all examples of necessary engineering and report data to be collected as the information becomes available and to be incorporated in the final notes.

Field offices usually cannot provide final drafting service, but may materially assist final mapping and summarize accumulated field data. The services of a full time draftsman are of particular value at starting and closing periods when he can assure proper closures of control lines, arrange layouts and complicated installations, and prepare preliminary drawings of field notes. A pencil drawing of the installed system is valuable to operating forces until the final plot books are released. During construction, special reports are sometimes needed that cannot be supplied by rushed field forces. In the case of an accident or explosion for instance, a photographic and historic record is to be prepared at once and full notes as to the hour, date, location, persons involved, etc., are to be clearly noted. As sections of the piping system are completed, an office man is kept busy on statistical summaries for report purposes.


FIELD NOTES CORRECTION SHEET
SHEET No
LINE No
STA. STA.
Order of Work
North Point
Street Line (or Lot Line)
Sheet Title
Cross Refer
Inventory Summary
Angles
Prop. Line Stations
offset (every 100')
Valve Box Installed?
Describe Fitting
Cover on Pipe (Every 300')
Identify Paving
Extension Posted
REMARKS
Plus on curb box for electrolysis connect.
Instrumentation?
When field notes are checked for signature, this check sheet may be observed for needed corrections
Make a separate outline of detail required such as:
Paving:- Gravel, concrete, asphalt
Fittings:- Size, make, connect; no.
Boxes:- Number Units, Type material
Prop. Lines:- Note if computed
Extensions:- Inventory?; K-Refer?
It is suggested that a separate sheet be made for each line or network. Office will keep a carbon copy to show "notes out for correction." Check should be by an experienced man only.
6

Periodical Reports

Costs and Quantities

Close cooperation of all departments and a clear understanding of the classification of the job is of primary importance in preparing reports for temporary control or for permanent use. Guides of the major groupings generally used are given below:—

General Notes. Pipes for main lines and pipes for services, together with their related costs, should be separated for the entire job. Provide quantities of pipe and fittings by line sizes such as 1½", 2", 4", etc. Group other work done regardless of pipe size—see below.

Clearing and Grading. (Lin. Ft.) Include in this account the special conditions encountered. Usual clearing goes in "Excavation."

Unwatering. (Lin. Ft.) This account records expense in connection with by-pass flumes, creek diversions, bulkheading, cofferdams, etc. Any costs of water removal from trenches due to heavy rains is chargeable to increased cost of excavation.

Excavation (Lin. Ft.) For quantities, subdivide earth and loose rock from solid rock removed. The latter includes boulders drilled, whether sprung or shot and which is reported in cubic yards. Include here re-excavation costs but not quantities, unless special. Paving re-excavation and subgrade dressing is chargeable to paving. Substructure research by hourly men is applicable to excavation. Repair of lines broken in ditching is chargeable to this account.

Backfill (Lin. Ft.) Avoid charges here due to disposal work. Include in this group the cost of rehaul to sunken ditches. Include costs of watering services for hydraulic backfill. Observe cleanup crews that might be an expensive factor to the construction costs.

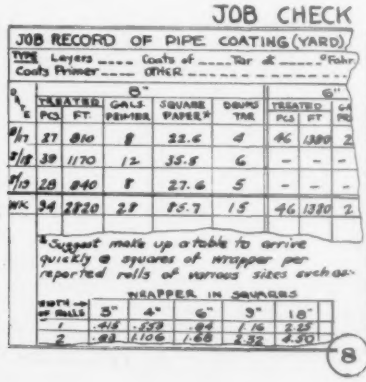
Disposal (Cu. Yd.) Check overall yardage with trench areas and possible average waste depth. Note truck haul count and capacities. Include broken pavement but subdivide from earth or rock disposal. Note machine loading if any.

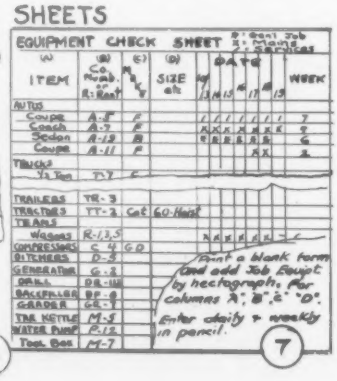
Paving Removed and Replaced (Contract Unit or Sq. Ft.) Estimate removal quantities from field notes. Measure replacement carefully. Show trench feet and square feet for all types of paving regardless of pipe size. Watch service cards for pavement work on private drives, walks, basements.

Piping (Lin. Ft. by Pipe Sizes—Use the measured slope distance of "carrying" pipe). Include in costs the expense of drips, casings, and risers. Future service couplings or stubs are not chargeable here but go to service costs. Watch welders' time for equipment repair, obstructions encountered (which is chargeable to excavation), odorizing station or other special construction, etc. Lump the costs of stringing and laying pipe. Make field observations of the trench work done on the protective coating of the pipes but avoid detail cost breakdown of this work unless excessive. Testing may have to be accumulated in one account for the mains and services and later be distributed to the various pipe sizes according to best field information.

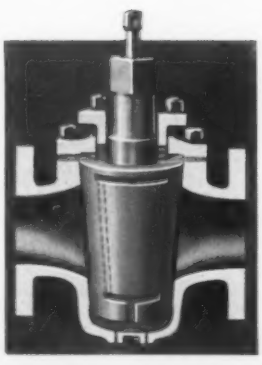
Electrolysis Connections (Each) Include accessories and test boxes. Studies concerning the effect of stray currents and actual potential tests may be design or overhead charges.

JOB CHECK SHEETS


JOB RECORD OF PIPE COATING (YARD)
TYPE Layers ____ Coats of ____ Tar & ____ # Felt
Coats Primer ____ OTHER ____
6" TREATED PCS
6" TREATED FT
GALS PRIMER
SQUARE PAPER*
DRUMS TAR
6" TREATED PCS
6" TREATED FT
6" PIPE
9/17 27 810 8 22.6 4 46 1380 2
9/18 39 1170 12 35.5 6 - - -
9/19 28 840 8 27.6 5 - - -
WK 94 2820 28 85.7 15 46 1380 2
*Suggest make up a table to arrive quickly @ squares of wrapper per reported rolls of various sizes each as:
WRAPPER IN SQUARES
BOTH ENDS OF ROLLS
3" 4" 6" 9" 18"
1 .418 .553 .84 1.16 2.25
2 .82 1.106 1.68 2.32 4.50
8



. . . There Stands a Gate with 7 Locks



At the south entrance of the great King Ranch in Texas there stands a gate. It is fastened by lengths of chain, joined by seven padlocks. For each lock there is a key; for each key an employee. So, if a lock is left unfastened, someone has explaining to do. How *simple!* How *effective!* ¶ Like an unlocked gate, a *valve* failure may cause tens of thousands of dollars in loss.

There are 7 principal valve responsibilities completely mastered by Nordstrom Lubricated Valves, namely: 1. Always easy to turn. 2. Fully leak-resistant. 3. Free from clogging. 4. Withstand highest pressures. 5. Operate at highest and lowest temperatures. 6. Resist corrosion and erosion. 7. Attain longest life. *Install Nordstroms. The saving is evident at every turn!*

NORDSTROM VALVES *give 7-way protection*

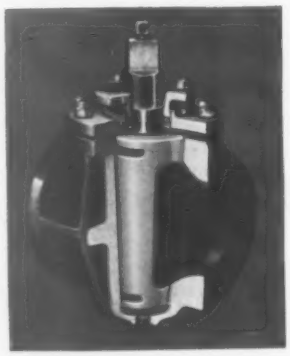
...*So they invested* **$40,000** *more and gained a valve bargain*

A costly pipe line was recently installed involving the purchase of valves running into six figures. Valve bids were called. The Nordstrom Valve bid was approximately $40,000 more than for ordinary valves. The purchasing board favored the lower quotations.

"I'd like to see us choose Nordstroms, but $40,000 is a lot of money. Maybe we had better save it and take a chance," declared one of the officials.

"H'm, there must be a good reason why Nordstroms are so extensively adopted for pipe lines," commented a director of the company. "But," he continued, "I think we can use the cheaper valves. They won't be operated more than once or twice a year, maybe not that often."

Finally the Line Superintendent was invited to present his recommendations.



It isn't the price of a valve that counts; it's the service it renders. Choose Nordstroms. They keep up-keep down.

"A single valve failure could cost us more than $40,000," he commented. "Personal injuries as well as material losses can occur. Who will take the responsibility? Some of these valves won't be closed once in five years; then, no doubt, only for an emergency. A valve with exposed seats might corrode. Stuff can settle in the recesses, so it can't close tightly. From my observation Nordstrom Valves will always open or close, no matter for how many years they are untouched," he declared.

This set the officials to thinking. They investigated.

The result? Nordstrom won the order. Yet, even though the valves cost $40,000 more, the savings in upkeep and the safety insurance for decades to come will *far offset* this extra initial investment.

Nordstrom

LUBRICATED VALVES

Sealdport Lubrication

MERCO NORDSTROM VALVE COMPANY—*a Subsidiary of* Pittsburgh Equitable Meter Company

WORLD'S LARGEST MANUFACTURERS OF LUBRICATED PLUG VALVES; GASOLINE, OIL & GREASE METERS

Main Offices: 400 Lexington Ave., Pittsburgh, Penna.

BRANCHES: New York City, Buffalo, Philadelphia, Columbia, Memphis, Chicago, Kansas City, Des Moines, Tulsa, Houston, Los Angeles, Oakland.

CANADIAN Licensees: Peacock Bros., Ltd., Montreal. • *EUROPEAN Licensees:* Audley Engineering Co., Ltd., Newport, Shropshire, England

PRODUCTS: Nordstrom Lubricated Valves; Air, Curb and Meter Cocks • Nordstrom Valve Lubricants • EMCO Gas Meters • EMCO-McGaughy Integrators EMCO Regulators • Pittsburgh Meters for Gasoline, Grease, Oil, Water and other Liquids • Raybould Couplings • Stupakoff Bottom Hole Gauges

Structures & Special Accounts. Provide a clear record of scope and treatment of each major account. Keep in touch with the central office requirements.

Samples of job check sheets are given in illustrations 7 and 8. Inventories and quantity recap sheets are shown on sketches 9 and 10. Illustration No. 11 shows a report form that may be used for either daily or weekly progress. Modification of this report is possible that allows showing the number of men on the job, daily payroll, unit costs today and to date, and the job estimate or "bogey" unit cost. Other reports should be made at the necessary intervals, giving a breakdown of the payroll force by trades. Still other summaries can show equipment performance, time studies, material deliveries and future requirements, and other various job controls desired. Special data for work orders and accounts receivable must be particularly clear and accurate.

Final Report

The final or completion report must be of a most comprehensive nature and be supported by all permanent notes, maps, indices, and intermediate reports. A sample report or model outline should be made up similar to the guide given below:

Guide For Final Report

Heading (in capital letters) System; Location; Title; Date; Job Name; Job Number.

Project (Division Heading)

Scope:—Whom or what constructed for; Pressures; Pipe sizes; Number of Services.

Route:—Location of major lines and networks; Text and map references.

Right of Way:—Franchise conditions; Private lands crossed; Other crossings; Clearing; Average ditch size; Unwatering and special difficulties; Give generalities here only and use headings below for details.

Metering:—Regulating and odorizing or other special arrangements in general terms only.

Construction (Division Heading)

Organization:—Key men; Type of labor; Quantity of force; Rates of pay; Average daily force; Working period; Peaks; Turnover; Shifts, etc.

Period of Construction:—(Give Dates) Job opened; Job closed; Torch burned; Purging; Weather; Cleanup; Tests; Extensions; Analysis of progress.

Methods:—

Pipe Treatment—Manufacturers coating; Job yard lavers of protective coating; Patching; Soil treatment; Methods of application.

Stringing—By whom; Contract prices; Unloading; Rehauling.

DAILY WEEKLY PROGRESS REPORT

Time Worked: Mains 16 Hrs. Days; Services 8 Hrs. Days

Report No. 42; Job No. 12A; Date 8-19-38; Weather Clear: Hot

Prepared by .....

Blankville ..... Distribution System

Classification Construction	Unit of Work	Mains (All Sizes) Period	Mains (All Sizes) To Date	Services Period	Services To Date
Unwatering	Lin. Ft.	-	72		
Excavation (1)	Lin. Ft.	3120	78720	179	39124
Solid Rock	Cu. Yd.	3	84	-	18
Backfill (2)	Lin. Ft.	2500	74000	179	39124
Disposal	Cu. Yd.	58	932	6	23
Paving Removed	Sq. Ft.	-	3096	-	321
" Replaced	Sq. Ft.	242	2941	24	108
Testing (5)	Lin. Ft.	1690	74000	185	38912
Service Taps	Each			-	1792

Equipment Item	Co.	Item	Co.
Autos	4	Tool Boxes	
Backfillers		Tractors	2
Compressors	2	Trucks	2
Compressors		Trailers	1
Ditchers	1	Pumps	
Genera. Acety		Wrap. Mach.	
Genera. Elect		Flares	
Graders		Drills	3
Paint Kettles	1		
Teams			

Piping		4" Mains Period	4" Mains To Date	6" Mains Period	6" Mains To Date
Stringing	Lin. Ft.			-	1700
(6) Welding	Lin. Ft.			-	1700
(4) Painting	Lin. Ft.			1170	3900
Laying	Lin. Ft.			-	1700

Piping		4" Mains Period	4" Mains To Date	2" Mains Period	2" Mains To Date	1¼" Mains Period	1¼" Mains To Date
Stringing	Lin. Ft.	4000	17038		25713	1300	34112
Welding	Lin. Ft.	395	15004			700	
Painting	Lin. Ft.	1382	17782			700	
Laying	Lin. Ft.	1690	12000			700	

		¾" Services Period	¾" Services To Date	1" Services Period	1" Services To Date	2" Services Period	2" Services To Date
Pipe Laid	Lin. Ft.	185	37664	-	1940	-	239
No. Compl.	Each	2	442	-	25	-	3

		4" Services Period	4" Services To Date	Special		Buildings	Piping
Pipe Laid	Lin. Ft.	-	9	Odorizer Sta.	%		
No. Compl.	Each	-	1	Regulator Sta.	%	15	5

Average Monthly Payroll $1100. Average Daily Payroll; Mains 168 Services 8

Service Card Data

Service Cards Recieved 617

Returned Completed 471

" Duplicated 60

" Cancelled 37

" Main Extens. 9

Total Returned 577

Balance to Complete 240

Signed .....

Address Blankville, N.

Phone 917 Ext 711

Remarks

① 620' hand; 2500 machine - Incl 20' re-excavated

② 200' " 1300 "

③ Two shifts 4:30 A.M - 1:00 P.M; 12:30 P.M - 9:00 P.M

④ Also Patching on line.

⑤ Soap Test Only - Standing Test begins 8/24/38

⑥ Incl. 2 Elect Wire Connections

NOTE! Running short 1¼" pipe. Only 3 days supply on hand.

(11)

INVENTORY & QUANTITY RECORDS

MAINS SURVEY INSTALLATION SUMMARY

Sheet No. or Report	Pipe: On Lines	Pipe: In Casings	Pipeless Bypass	Valves & Cocks: Valves Size	Valves & Cocks: Valves Series	Valves & Cocks: Stop Cocks Std	Valves & Cocks: Stop Cocks Less	Valves & Cocks: Other	Couplings & Connections: Std	Couplings & Connections: Other Nib	Couplings & Connections: Type of Sleeve	Couplings & Connections: Other Sleeve	Couplings & Connections: W. E. Couplg.	Pipe Size Sheet: ¾"	Pipe Size Sheet: 1"	Not Less Duplex: ¾"	Not Less Duplex: 1"	Remarks
406	315	60 - 8" 20 - 12"	2 ¼ Test	2	3cr	6"	-	-	2	1	16"	1-4" Ell 1-4" Tee						By Plug in valve & Test hoses
407	393	--																
408	567	--														6		Bell field weld
409	483															4		2 Ells with 3" Tee in Elect Cable & Bx Curb Box

SERVICE CARD INVENTORY SUMMARY

Completed Date	Card No.	¾" Pipe Total	1" Pipe Total	Other Pipe Total	Riser Only	Std Ell ¾"	Std Ell 1"	Street Ell ¾"	Street Ell 1"	Coupling ¾"	Coupling 1"	Plug ¾"	Plug 1"	Standard Curb Cock ¾"	Long Curb Cock 1"	Wing Curb Cock 1"	Curb Box & Cover	Miscellaneous
7/18	421	78			4	8		4		8		1		1				1-¾" Dresser
18	460	198		28	23	6				6								Note the Back All Fittings 2"
16	65			28 (2")	(168')	(7)		(3)		(1)		(1)		(1)		(1)		

(9)

CONSTRUCTION QUANTITIES — MAINS (Entered Daily from Field Check) Size Line 4"

Date	Excavation: Total	Hand or Mach	Rock Ft	Rock Tunnel	Backfill: Total	Hand	Mach	Disposal: Cubic Yards Lin. Ft.	Earth	Rock	Pavmt	Welding Acety: Total	Miscellaneous
8/18	1668	385 1320	6	5 10 27	295	92	203	-				2500	1000 3500
8/19	1832	580 1300	24	27 12 24	1800	208	1592	(3000) 4000	60	10	(30)	395	- 395
Wk.	3560	936 2620	30	32 22 51	2095	300	1795	4300	60	10	6	2895	1000 3895
To Date	13390	1140 11650	76	35 34 30	12000	2280	9800					13892	1918 15004

SERVICE CARD TABULATED RECORD — Blankville ..... Distrib Syst

Date	Ordered: No.	Ordered: To Date	Completed 1": No.	Completed 1": To Date	Completed 1": Feet	Completed 1": To Date	Completed ¾": No.	Completed ¾": To Date	Completed ¾": Feet	Completed ¾": To Date	Cancelled: No.	Cancelled: To Date	Duplicate: No.	Duplicate: To Date	Returned for Approval: No.	Returned for Approval: To Date	Recvd with Permit: No.	Recvd with Permit: To Date	Balance or Remarks
Fwd		814		63		746		632		36882	35		48		15		7		Also 4" [illegible] & (1) 2" Industry
8/18	3	817	2	27	200	1940	8	640	630	37579	2	37	12	60	18	30	4	11	
8/19		817		25		1940	2	442	165	37744		37	1	61		30			
Week																			
8/21																			

(10)

Welding—Lineal feet electric and acetylene welded; Sizes and make of rods; Services welded or screwed; Future service taps and how installed; Welders tests; Time studies; Valve setting; Other coupling methods.

Excavation—Feet by hand; By machine; Depth; Width; Soil; Tunneling; Crossings; Traffic lanes; Wall entries; Solid rock; Shoring; Substructures encountered; Unwatering methods.

Paving—Types; Breakage; Replacement; Disposal; Inspection.

Laying & Backfilling—Method; Sequence; Photos; Stresses in pipe; Hand or machine; Hydraulic or machine tamping; Disposal methods and by whom.

Testing—Shut-in; Standing; Type of gauge; Charts used; Pressure; Soap tests; Test sequence; Final test (time placed on, off, and analysis); Services; Operating personnel present; Retreatment for leaks.

Equipment—Tabulation of description; Performance; Costs; Disposition at end of job; Recommendations for future purchases; Accessory plants; Rented items; General small tools (under $100).

Material (Division Heading)

Pipe:—List specifications; Dimensions; Make; Order number; Bundles.

Couplings:—Sizes; Sleeves; Types; Connection; Swages; Unions; Crosses.

Valves:—Complete description; Material; Hand or wrench operated; Working pressure; Stop cocks.

Caps, Elbows & Plugs:—Size, Street or plain; Screwed or welded; Tees and miscellaneous fittings.

Boxes:—Units; Concrete; Tile; Wood; Curb; Valve; Paint; Covers.

Casings & Vents:—Sizes; Corrugated; Cast iron; Wood; Other; Seals; Notes to find trouble if any expected.

Electrolysis Test Stations:—Include description of coupling protection; Other installation specialties; General tests and exploration methods; Dangerous areas to watch.

Regulators & Meters:—All installations inside city gate house. Refer detail notes to drawings; Capacity; Odorization methods; Vaults; Telephone arrangements; List installed equipment.

Quantities (Division Heading)

Inventories:—Summary count only; By lines if needed; Service summary.

Construction Quantities:—Same classification as accounts. Units of work.

General Information (Division Heading)

Closure date:—Origin of data: references; Appendices; Acknowledgments; Copies; Signature.

Organizational Arrangements

Generally, field layout parties may be confined to three men in each party who will attend to presketching, right of way, crossing surveys, and general traverses. A recording crew of two men can take care of limited construction and installation activities. One engineer should be specifically assigned to services. With the above and an office man or draftsman, the supervising engineer has his basic force that may be varied according to the size and speed of the work.

AGAIN
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When Gas Company Employes May Recover Damages For Injuries

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

THE CIRCUMSTANCES are numerous under which gas company employes may recover payment for injuries under State Workmen's Compensation laws. However, in many instances employes may sue and recover damages from the gas company instead of accepting compensation payment under state laws.

Therefore, this article will confine itself to late and leading higher court cases in which gas company employes were held not entitled to recover compensation under state laws, but filed suit against the gas company.

First, it is important to know that irrespective of when or how a gas company employe sustains an injury, he is not entitled to recover damages if the testimony shows that the accident could have been avoided *had the employe used ordinary care to protect himself against the injury.* This is known as the law of "contributory negligence." This term means that the employe sustained an injury as a direct result of his own carelessness.

For illustration, in Guthrie v. P. R. Company, 51 Neb. 746, the court said:

"Contributory negligence is conduct for which plaintiff is responsible, amounting to a breach of the duty to which the law imposes upon persons to protect themselves from injury, and which, concurring and cooperating with actionable negligence for which defendant is responsible, contributes to the injury complained of as a proximate cause."

See Eaton v. Merritt, 281 N. W. 620, in which the court said:

"Want of ordinary care, and not knowledge of the danger, is the test of contributory negligence."

And in Welsh v. South, 152 N. W. 302, the court said:

"A duty rests upon a person to exercise ordinary care for his own safety."

And again in Gardner v. Metropolitan Utilities District, 278 N. W. 137, the court said:

"A person who knowingly and of his own volition exposes himself to an obvious danger cannot recover damages for any injury which he might have avoided by the use of reasonable care."

It is quite apparent that a gas company employe is not entitled to recover damages for an injury sustained as a result of his own carelessness. Therefore, an important consideration of the court, in suits filed by gas company employes for injuries, is: Did the employe exercise care to protect himself against the injury? If the answer is negative, then the person or corporation against which the suit was filed is not liable.

For illustration, in Wentink v. Traphagen, 291 N. W. 884, it was disclosed that a gas corporation's employe delivered two gas ranges to a building for a tenant to be exchanged for other stoves then in use. It was customary for the company employe to connect new stoves with the gas line, if the purchaser so requested. The employe was requested by the tenant to make the necessary connections, and he agreed to "change the stoves." It was customary to first shut off the gas at the water heater and then at the meter before an old stove was disconnected and a new one connected to the gas line. The employe asked the location of the gas valve and the valves of the hot water tank. The property owner told him they were in the basement. The employe said "all right." Nothing else was said. The employe had never been in the basement before. He entered the basement and while looking for the heater he fell into a pit. He sued the company to recover damages for the severe injuries he sustained.

The employe contended that the property owner was responsible for the injury because he did not inform the employe that there was a pit in the basement, and also because the property owner did not have lights or other illumination in the basement. However, the higher court held the employe not entitled to recover damages, saying:

"That plaintiff (employe) was seriously injured is not questioned. . . . Negligence is not actionable unless it be the proximate cause of the injury to the complaining party. . . . Proximate cause, as used in the law of negligence, is that cause which in a natural and continuous sequence, unbroken by an efficient intervening cause, produces the injury, and without which the injury would not have occurred. An efficient intervening cause is a new and independent force which breaks the causal connection between the original wrong and the injury."

Proximate Cause of Injury

In many litigations involving contributory negligence the testimony may show that negligence of both the employe and another person resulted in the injury. Under these circumstances the one whose negligence was greater is the party at fault. For illustration, in Mundt v. Chicago, 286 N. W. 691, it was held:

"If plaintiff (employe) is guilty of negligence directly contributing to the injury, he cannot recover, even though defendant was negligent, unless the contributory negligence of plaintiff (employe) was slight, and the negligence of defendant was gross in comparison therewith. If, in comparing the negligence of the plaintiff is found to exceed in any degree that which under the circumstances amounts to slight negligence, or if the negligence of defendant falls in any degree short of gross negligence under the circumstances, then the contributory negligence of plaintiff, however slight, will defeat a recovery."

Also, see St. Joseph v. Hedge, 44 Neb. 448, in which the court said:

"Two acts of independent source are not concurrent in causing an injury, if one of them merely furnishes a condition by which such injury is made possible, and later such injury occurs through the efficient, self-acting, and independent operation of the other. In such case the latter and not the former is the proximate cause of such injury."

Review of Cases

Now, in order to verify explanations of the law, we shall briefly review leading higher court cases involving contributory negligence, and in which the injured employe was *not* entitled to recover damages.

In Winterson v. Pantel Realty Company, 282 N. W. 393, the employe failed to prove that the lack of lights was the proximate cause of an accident.

In Sodomka v. Cudahy Company, 163 N. W. 809, the employe backed into an elevator shaft without looking. The court held that his negligence was so gross that a recovery was barred. The court stated:

"His relying upon a custom when nature had given him eyes is not excusable."

In Schabel v. Onseyga, 251 N. Y. S. 280, an employe fell down a dark stairway, and the court held that "danger lurks in groping about in strange place in darkness" and that a "greater duty" rests upon the employe under those circumstances to exercise care.

In Benton v. Watson, 231 Mass. 582, the court held that "one who walks in the total darkness of a strange hall is likely to encounter obstructions to his passage and pitfalls to his feet," and denied recovery of damages "because, as a matter of law, the plaintiff (employe) was not in the exercise of due care."

In Weller v. Consolidated Gas Company, 198 N. Y. 98, the employe proceeded into a darkened space, and the court held that he did so at his own risk and that he failed to exercise the degree of care essential to a recovery.

In Steger v. Immen, 157 Mich. 494, where an employe groped along a corridor, opened an unlocked door, stepped into the dark and fell down a shaft, the court held that this was an "act of folly" barring recovery "to enter on a cruise of exploration and discovery without stopping to determine whether it was safe to proceed."

In Brugher v. Bucktenkirch, 167 N. Y. 153, where an employe was injured in the dark in a strange building, the court held that there was a "duty of exercising greater caution, or of refraining from proceeding" and that to proceed was contributory negligence barring recovery.

In Hudson v. Church of the Holy Trinity, 166 N. E. 306, where the employe had proceeded in the darkness of an unlighted, strange hallway and fell downstairs, the court said that he having elected to proceed in the darkness, was guilty of contributory negligence as a matter of law.

In Kurre v. Graham Ship By Truck Company, 136 Kan. 356, where the employe followed a voice and proceeded along, feeling his way with his feet, and fell, the court held that it was his duty to refrain from proceeding into the darkness of strange surroundings without finding out where he might safely go, that he proceeded at his peril, and when he met with an accident he was guilty of negligence as a matter of law.

Also, for other cases upholding the law that an employe is not entitled to recover damages if his own negligence was the proximate cause of the injury, see Murphy v. Cohen, 223 Mass. 54; Bedell v. Berkey, 76 Mich. 435; Medcraft v. Exchange, 211 Cal. 404; Massey v. Seller, 45 Or. 267; Johnson v. Washington Route, 121 Wash. 608.

Liability of Property Owner

A review of higher court cases reveal that numerous owners of private property have been held liable in damages to gas company employes who were injured while on the private property for the purpose of reading meters, repairing gas appliances, installing equipment, and the like. Quite obviously, it is important to determine when liability exists for this classification of injuries.

Various higher courts have held that owners of private property are not insurers against gas employes sustaining injuries while on the premises. However, the law expects such owners to use reasonable care to safeguard against injuries to all persons, including gas company employes, who are known to be on the premises or likely to come thereon; and of course the law requires the employes to exercise ordinary care to safeguard themselves against injuries. So, therefore, in many cases involving injuries sustained by gas company employes, while on private premises, the court must decide whether the property owner or the employe is responsible for the injury.

However, the same law is not applicable to strangers who go upon premises owned by gas companies.

For example, in Schiffer v. Sauer Company, 238 Pa. 550 it was disclosed that a person entered a gas company building to seek employment. He was injured by an explosion resulting from the negligence of the gas company employes in failing to cap two openings in the main gas line in the building. This court said:

"He was therefore a mere licensee, and the only duty the defendants (gas company) owed him, under the conceded facts of the case, was to abstain from inflicting on him an intentional, wanton, or willful injury."

Also, in Weaver v. Car, 72 A 552, a person was injured while visiting on gas company property by falling through an opening caused by the removal of a floor plate.

The higher court, in denying him recovery, said:

"The object of the visit was to afford pleasure and benefit to the visitor; so that the facts show merely a case of license upon the part of the owner. There is nothing in the record to show that appellant was invited or induced by any act of the defendant but it does appear that he went there entirely for his own personal gratification. The authorities are almost uniformly to the effect that licensees and guests assume the ordinary risks of getting hurt while upon the premises of the licensor or host."

Therefore, the law is established that all owners of property owe practically no duty to a person who without business, regular duties or other authorized rights go on private property. However, as above explained the owner of private property owes to gas company employes a duty to use reasonable care to safeguard them against injury, if such employes come onto the premises for the purpose of reading meters, performing repair work, or performing other services.

Water Pump Operated by Gas At "110%" Efficiency

Engineers usually arch an eyebrow when a deep well water pump hits an efficiency of 85%, but honors go to a unique pump installation recently made by the City of Payette, Idaho.

E. N. Dibble, of Payette, agent for Peerless Pump Company, installed for the city a pump which delivers 400 gallons per minute from an 8" well. The pump is of turbine type and is powered by a Ford V-8 engine, direct-connected through a Peerless Gearturbo right angle drive. When the pump started it not only produced water but gas as well.

Finally, Mr. Dibble ran a pipe from the discharge of the pump vertically to separate the gas from the water, carrying it to a collecting tank. Then another pipe was connected to the engine. There is sufficient gas to operate the engine and give 10% surplus for lighting the plant and for heating. When first installed, the pump was operated by an electric motor, at a monthly power cost of about $200.00. Now the City gets its water pumped without cost by using the gas which was unexpectedly developed.

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"Satisfied!"

Consumers approval of an improved Gas Cooking Service is an aftermath of every Universal Sale!

● Universal brings to the homemaker a new order of cooking satisfaction. It promotes greater convenience and economy plus added use value in all phases of cooking. It offers a modern cooking service which emphasizes the woman's interest—assuring a new and higher standard of automatic controlled performance. Universal with its advanced devices interprets gas fuel in the best possible light because it demonstrates the superiority of gas over all types of competitive fuels. A Universal in the home means an OK by the homemaker on gas as the ideal cooking fuel.

cp

Universal

GAS RANGES

Manufactured by CRIBBEN & SEXTON CO. • 700 N. Sacramento Blvd. • Chicago

Gas Range Campaign Successfully Creates Big Fall Sales

By
Arthur J. Larson

FALL IS THE TIME to promote gas ranges, and the campaign put on last fall under the sponsorship of the Gas Appliance Society of Oregon for its dealer members, with the cooperation of several gas range manufacturers and the Portland Gas & Coke Company, has many angles which mark it as a model.

The campaign was pointed to increase the sale of all new gas ranges, with special emphasis being placed upon the promotion of the CP range as being a greater volume builder for the dealer and the manufacturer and a more desirable and satisfactory appliance for the customer.

The highlight of the campaign was a customer essay contest which drew thousands of entries and stimulated floor traffic for the dealers participating in the campaign.

The contest theme was well planned.

Wide publicity has been given both locally and nationally to the many advantages offered by the CP gas range, including savings of time, fuel and food, better cooking results and greater convenience. Since the public was informed or could easily become informed on these points it was asked to submit an essay of not less than 50 nor more than 100 words on the subject: "It Pays to Own a CP Gas Range Because . . ."

In order to stimulate continued interest in the customer essay contest throughout the campaign period, about 10 weeks, a series of weekly awards was made to contestants.

Each week a ten dollar merchandise order on the store which issued the weekly winning entry blank was awarded to the person who submitted the best entry. The judges were the home economics directors of the daily newspapers, and the president of a woman's organization. That meant that a ten dollar award was given each week of the campaign. This merchandise order had a value of fifteen dollars if applied towards the purchase of a new gas range at the store where the winning entry form was received.

The grand prize winner, selected at the end of the contest, received a merchandise order from the store where the winning entry was received. This merchandise order was applied by the winner toward the purchase of a new CP gas range. A rule of the contest was that if the grand prize winner had purchased a CP gas range during the campaign the merchandise order was worth a hundred and fifty dollars.

Each week the ten best essays selected from the thousands entered were given careful consideration by the judges. The best one of the ten received the ten dollar weekly award. The other nine were set aside in the office of the Gas Appliance Society of Oregon and marked "escrow" for consideration in connection with the award of special salesmen's bonuses.

A cash award of five dollars was given dealer salesmen who issued the winning entry blank each week. At the end of the contest, a special bonus of five dollars was given to any salesman who had given any contestant an entry blank which made the "escrow group", provided the contestant had purchased a new CP gas range from the dealer where the entry blank was received during the campaign.

A prize of twenty-five dollars was awarded the salesman who issued the winning entry blank to the grand prize winner. Double this amount was awarded to the dealer salesman, provided the grand prize winner purchased a new CP gas range during the period of the fall campaign, or not later than the end of December, from the dealer who issued the blank.

To build interest in the contest, a genuine stainless steel pastry server was given as a premium to everyone who entered.

To arouse interest in the campaign among the dealer salesmen fifty dollars in cash was awarded to the one who sold the greatest number of new CP gas ranges during the contest. A second prize of twenty-five dollars went to the runner up. Also fifty dollars in cash went to the salesman who sold the greatest number of all qualified types of new gas ranges during the period. Only one of the major prizes could be won by a single individual, and the number of CP gas range sales was the primary deciding factor in being winner.

Also fifty dollars in cash in five separate ten dollar awards were paid the dealer salesmen through a drawing. One draw was allowed for each four points accumulated on the following basis: Four points for each CP gas range sold during the contest; two points for each new range priced at $99.50 or more, not a CP range; and one point for each new range priced less than $99.50.

A special Christmas drawing was held in addition to the one above. Every salesman who sold one or more new gas ranges during the contest period participated in a Christmas tree drawing. Prizes from cigarettes to five dollar bills, having a total value of $100, were made available and each salesman was allowed to draw once for each new gas range sale reported to and verified by the Gas Appliance Society of Oregon.

The rules adhered to to make the contest impartial were:

1. Only ranges carrying the sticker of the Gas Appliance Society of Oregon could qualify for any contest prizes or awards.
2. Only new gas ranges of certain makes were eligible.
3. Only dealer members of the Gas Appliance Society of Oregon, in good standing, could participate.
4. Only CP gas ranges with a regular retail selling price of $100 or more could qualify for CP sales credit for any awards.
5. Only new ranges sold during the weeks of the contest period could qualify for contest credit.
6. In the event of a tie between one or more salesmen, for the major

awards, the winner was determined by the total volume in dollars on ranges sold and installed during the period of the contest.

7. Only four units of multiple sales made to a single purchaser, such as apartment houses, could receive prize award credit.

8. Contest entry blanks issued to customers had to be signed personally by the salesmen to qualify for prizes or bonus awards.

Each dealer in the contest was required to assume a share of two cents each of the cost of the premium pastry server given to contest entrants. A memorandum charge of ten cents was made upon delivery of the number of premium units required. Full credit of ten cents was given at the end of the contest, for each unit the dealer returned. For each pastry server accounted for by a completed contest entry blank, a credit of eight cents was given the dealer. A charge of ten cents per unit was made for pastry servers not returned.

Each dealer who issued an entry blank upon which an award was made assumed a share of the cost of the merchandise award equal to ten per cent of its retail value. For example, for an award of ten dollars made to a contestant as a weekly prize, the Gas Appliance Society paid the dealer the sum of nine dollars, and notified the winner that the award of ten dollars merchandise credit was available at the store of the dealer issuing the entry originally.

The Office of the Gas Appliance Society was not responsible for contest entries lost in transit, but advised dealers, upon request, of the number of entries received and recorded for credit.

Educational literature handed persons asking for the entry blanks contained the paramount theme that the CP gas range saves while it does the cooking. Time savings were emphasized to the homemaker in that the new range was completely automatic as to lighting—and that a turn of the handle gave instant full heat for the oven, broiler or top burner; that a super-speed top burner made cooking one-third faster than with older ranges.

Another sales point put out was that fuel savings were great, due to the fact that all new type CP burners were scientifically designed to effect savings in gas, and that burners were capable of going from a tiny simmer to super-speed heat.

Food savings also were emphasized, it being pointed out that without an automatic oven heat control the homemaker must use the old-fashioned and unreliable guess method, which often resulted in wasting fuel and food. One sales fact that impressed women was that low water cooking, which conserved the valuable vitamins and healthful food minerals, was made possible on all top burners—an important advancement in modern gas range design.

Window displays, banners on trucks, newspaper ads, and radio broadcasting were used to inform the Portland territory of this successful contest, which in some instances is estimated to have increased sales a hundred per cent among dealers.

Handbook on Building Maintenance

A handbook on building maintenance issued by Flexrock Company of Philadelphia includes many new phases of building maintenance. How to spontaneously stop leaks—make feather edge patches "stick" to concrete,—how to patch roofs economically,—how to install floor grids, —and hundreds of other educational suggestions are included in its 74 pages and over a hundred and fifty illustrations.

This new book will be given free of charge to any responsible party requesting on his business letterhead. It is printed in black and orange with a gloss cover.

TITAN WATER HEATER CONTROLS

AGA Approved
TITAN Temperature and Pressure Relief Valve

This device is installed on the hot water outlet in the tank directly in the flow of water. Action, as a result, is unfailing and positive, there being no dead pockets to prevent proper functioning of relief valve.

Pressure relief is obtained through a spring-loaded valve which opens when the pressure reaches a predetermined point. Should the water become overheated to 200° F, a fusible disc melts and lets the water escape thereby preventing a further increase in temperature.

The Titan Relief Valve serves as a coupling connected in the line thereby eliminating the necessity and expense of a tee fitting. To replace fusible disc, it is not necessary to disassemble valves or piping in any way.

Design for application to storage or range boilers. Prevents corrosion, scalding and explosion.

Catalog and full information upon request.

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ALL MAKES — ALL SIZES OF METERS

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SEND FOR OUR CIRCULAR ON METER REPAIR PARTS

SAMPLES AND PRICES GLADLY SENT
— o —
LAMBERT METER CO.
PLAINFIELD, NEW JERSEY

Checkmate
...at the very brink

THE SECRET ? CONTROL

When nature steps out, the iron lung steps in—takes over the job of breathing when *human* apparatus fails. Even as you read this, somewhere life that hangs by a slender thread is being maintained, thanks to dependable *control* built into this mechanical miracle.

Less dramatic, but of great significance, is the accurate *control* of heat by the Harper Burner System. By making top-burner cooking easier, and more economical, it is helping both the gas industry and the range manufacturer to convince housewives that *gas* cooking is best.

...pr. 1940, Harper-Wyman Co.

CONTROL *is the secret here, too*

● The Harper Burner System is a patented invention whereby each of the burners on the range is actually 2 burners in 1 . . . a burner within a burner . . . both operated and controlled by a single handle.

This arrangement affords a high-speed STARTING BURNER to *start* foods boiling and for fast frying . . . plus a small, central, economical COOKING BURNER for *maintaining* the cooking. The COOKING BURNER can be used entirely independently of the STARTING BURNER. No other top burner possesses this vital advantage — which insures easy, accurate control: just the right heat for every type of top burner cooking . . . every time.

HARPER-WYMAN COMPANY
8562 Vincennes Avenue, Chicago, Ill.

HARPER BURNER SYSTEM

HARPER BURNER SYSTEM

Demonstrates GAS at its best

SEE OTHER SIDE OF THIS PAGE

For sterilizing baby's bottles

. . . the Harper Burner System "does it better"

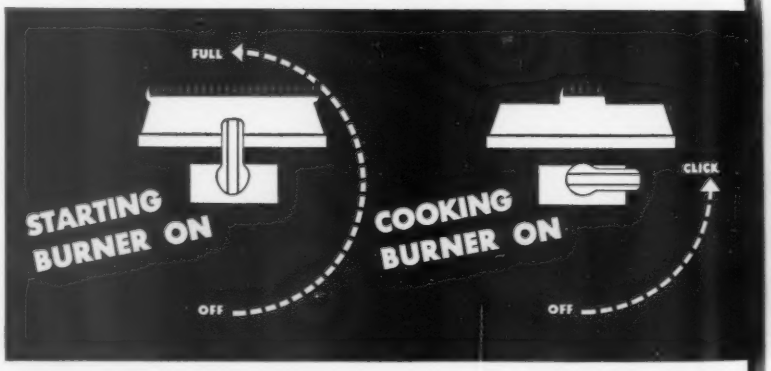
FACT: No matter for what purpose top burner heat is used, you can be sure that the Harper Burner System will "do it better."

For example, when sterilizing the baby's bottles, or sick-room dishes, both sections of this famous burner help to do it—more easily and economically than is possible with ordinary top burners.

REASON: First, the water is quickly brought to a brisk boil by the large flame of the STARTING BURNER. A turn of the handle then changes the flame instantly to the small COOKING BURNER which maintains the water at the boiling point of 212 degrees.

BENEFITS: There is no wasted heat up the sides of the vessel—the small COOKING BURNER centers it on the *bottom* of the vessel, where it belongs. You boil and sterilize with no wasted gas, no boiling dry, no excess kitchen heat.

The Harper Burner System is adjustable to *lower* heats than are ordinary top burners. This is due to its "2-burners-in-1" construction, a patented principle that has done much to make gas cooking easier, and better than ever before . . . and to sell more women on gas.



The Harper Burner System provides a burner within a burner. The diagram above shows how the COOKING BURNER operates entirely independently of the STARTING BURNER. Yet both are controlled by the same handle.

We shall be glad to send you, without cost, two booklets that tell the complete Harper Burner System story . . . "Modern Methods of Top Burner Cooking" and "The Greatest Cooking Discovery in 40 Years". They should be valuable to anyone interested in the promotion of gas cooking and gas appliances. *Harper-Wyman Company, 8562 Vincennes Avenue, Chicago.*

SEE OTHER SIDE OF THIS PAGE

HARPER BURNER SYSTEM

HARPER · BURNER SYSTEM ·

The Selling Parade

A Digest of Successful Selling Ideas

By
Charles B. Roth

HE WAS QUITE a salesman in his day, selling his manuscripts, for he earned his competence as a short-story writer. He moved from the west to New York City, and now, his work over, he lives in quiet retirement. I didn't expect to find a salesman in a writer. But he gave me an idea that's as good a selling idea as I have met in months.

Said he: "I soon discovered when I started to sell my stories that some men got big prices and some men got small prices for their work. And I also discovered that the quality of the work had little to do with it."

"What had, if not the quality of the work?"

"The salesmanship the writer used."

"That's a new kind of salesmanship to me. But go on."

"Well, when I would call on an editor with a story, he'd size me up. Authors are usually broke. So the editor, knowing that, would offer less than the story was worth. In other words, he'd pay distress prices. Of course, they don't do that so much now. But I am talking about my days when the market was much more unorganized."

"So you did what to get higher prices?"

"Looked prosperous. And I think that a pair of shoes I called my 'selling shoes,' earned me at least $3,000 extra a year. You're smiling. You want to know what selling shoes are. Listen. Those editors always sized a man up by the appearance of his feet. If he had on worn shoes, they decided he was up against it, and they paid him less. So I bought an expensive pair of shoes, and wore them only when I was selling my wares. I wore them for three years, and they looked as new as the day I bought them."

Well, this is a different slant on salesmanship, but I think the suggestion it carries is one you and I could both learn. The suggestion: *Look the part of a prosperous business man and win the respect of every buyer.*

I BELIEVE THAT I UNDERSTAND now one of the reasons why Frank Webster, an Indiana friend of mine, has been so successful. One of his

customers gave me the tip. This customer had just made a request which he thought unreasonable. But Webster didn't think it was. He granted it. This led the customer to tell me:

"Frank Webster would move a mountain, if necessary, to please a customer."

Webster isn't a brilliant man. He has none of the earmarks of the "go-getter." He doesn't dress like a successful man, or talk like one. But in spite of that, he's about the most successful salesman I ever knew.

I am inclined to think that perhaps this lack of brilliance is the one quality which contributes most to his success, for he believes many of the truths that some of the more sophisticated and worldly salesmen have long since cast out.

Service, for instance. He believes in service. That is one of his doctrines. He tries to give his customers better service all the time, and is continually talking about it to them, to his employes and to his friends. Yet many years ago didn't H. L. Mencken blast the idea of service and say it was out of date? And don't most of us go around half-ashamed to use the word?

You could go to Webster at any time of the day or night and ask him to do you a favor, and he'd get up, no matter how late it was or how tired he felt, and come down, open up his store and get you what you wanted.

His competitors would probably tell you where to get off if you got them up at 3 in the morning, but when it comes time to pay the rent, they would worry about where to get the money. All Frank would do is write a check.

IN THIS COLUMN I have taken a stand many times against the tendency many salesmen have of becoming joiners for "the good of their business." I have often said that in my opinion a salesman who spreads his fire and dissipates his time by going in for outside and extraneous activities in the name of "contacts" or "good will," is writing his own ticket to failure.

But I do believe that a certain amount of this public relations activity on the part of a salesman is necessary. It is quite a different kind from the wholesale joining of this or that and accepting the chairmanship of every committee that comes along.

It is the kind of intelligent outside activity a salesman undertakes for the purpose of winning the favorable esteem and cooperation of his customers.

One man I know has been very successful in selling a hard line in a hard territory to hard customers. When I asked him a few weeks ago to explain the secret of his extraordinary success, he told me:

"Cooperation with my customers."

"All salesmen cooperate with their customers, don't they?" I remarked.

"Not exactly in the way I do. You see, if you cooperate with a man in things in which he is interested you win his respect. This does not necessarily mean things connected with his business. It can be in affairs far removed from business."

"Tell me specifically how it applies," I said.

"Well, you have seen me apparently waste time on Community Chest drives?"

"I have noticed you are always active."

"I'll tell you why: My best customer has the Community Chest as his hobby. If he sees I am interested

in that, he respects me. The same with a lodge I joined. That appeals to another big customer."

There is a fine point of ethics here, but I think we can dispose of it. The point is this: Does this salesman or any other salesman demean himself and become a hypocrite by joining things merely for the sake of impressing customers?

I do not believe he does. Salesmanship is the art of pleasing. All of us who sell often have to do and say things we would not ordinarily say and do, because it pleases our customers or prospects. If a man doesn't want to sell, he can be blunt; but if he wants to sell, he must keep in step.

I HAD ALWAYS CONSIDERED letters of introduction an impotent way of making a selling approach until I met the top salesman of a large Philadelphia house. He began selling late in life. He was a banker before he became a salesman. And in spite of the traditions that hedged in his early business life, he became extremely successful in selling. When I met him he was a man with an international success reputation.

I was interviewing him for a national magazine and I asked him, of course, about his selling methods, about the things he had found most effective. One of the first recommendations he made was that of using letters of introduction. He said that that technique had come as a result of his training in banking.

"The letter of introduction enables you to put on a front by being introduced by the most important people," he told me. "You go in unannounced and unintroduced and you set up an obstacle of your own making.

"Now, if you have letters from the right people, you can smash down that barrier right away. I always keep a few letters ahead, and am continually asking my customers to introduce me to others who they think might buy. I find that it pays."

After giving the matter due thought, I am convinced that I was wrong about letters, and that the banker-salesman is right. I intend to use them more.

THE SALES EXECUTIVE, pushing a sheet across the desk to me, said: "Take a squint at that." It was a list of names. "What is it?" I asked. "Who are these men?"

"They are our bad order men for the week," he replied.

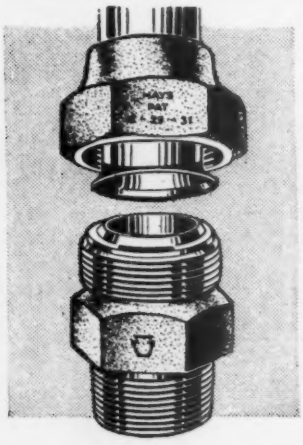
"Bad order men?"

"Yes. Our men who are off the job because of illness. Do you know how much it costs this firm to have its men ill each year?"

"I haven't the faintest idea."

He cited the figure, and it was astounding. This executive's belief is that, while illness is inevitable, much of it is a man's own making. I give you his ideas for what they are worth. He says that health is a thing a man, in most cases, can retain or, if lost, can regain, and that every man can keep at a high health standard if he will pay a little more attention to his physical well-being.

I know this, that the best advice I could give a man to help him sell more would be to keep feeling better all the time.

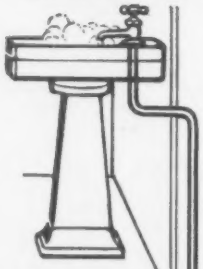


400 Styles and Sizes of Hays Double Seals. Approved by Underwriters Laboratories.

ECONOMICAL INSTALLATION

SELLS MORE

WATER HEATERS



By installing ⅜" Copper Tubing by Hays Copper Plumbing Method in place of ¾" Galvanized Pipe in 37 ft. length from storage to faucet, it was possible to deliver hot water at 150° F. for 1,930 cu. ft. of gas per month or at $1.60 per M.C.F. — $3.00.

Same installation with ¾" Galvanized Pipe required 2,650 cu. ft. of gas at a cost of $4.04.

The above performance is an average of 34 tests conducted to prove the economy of small size copper tubing for hot water lines. Write for Hays Catalog on Copper Plumbing. Sell economy and you sell more heaters.

HAYS MFG. CO., Erie, Pa.

Kingsland Appointed Sales V.P.

George D. Kingsland has been appointed Vice-President in charge of sales for the Eastern Division of the Perfex Corporation, Milwaukee, Wisconsin.

During his 20 years' association with the control industry, Mr. Kingsland has pioneered many new ideas on controls and control systems.

He was one of the pioneers of the principle of zone heating and zone control of heating. In addition, his name is intimately associated with the inauguration and promotion of temperature regulation for large buildings; the control of air conditioning systems for both large and small installations; the development and merchandising of modern control systems for domestic warm air furnaces. For the past several years he has specialized on the application of controls to space heating, ventilating and air conditioning.

Mr. Kingsland will be located at the Perfex Corporation's New York office at 90 West Street.

San Diego Gas & Electric Co.

Announcement is made by W. F. Raber, President, that as of August 28th, the title of San Diego Consolidated Gas & Electric Company has been changed to the above.

The change is entirely a matter of convenience and does not in any way affect the status or operations of the Company.

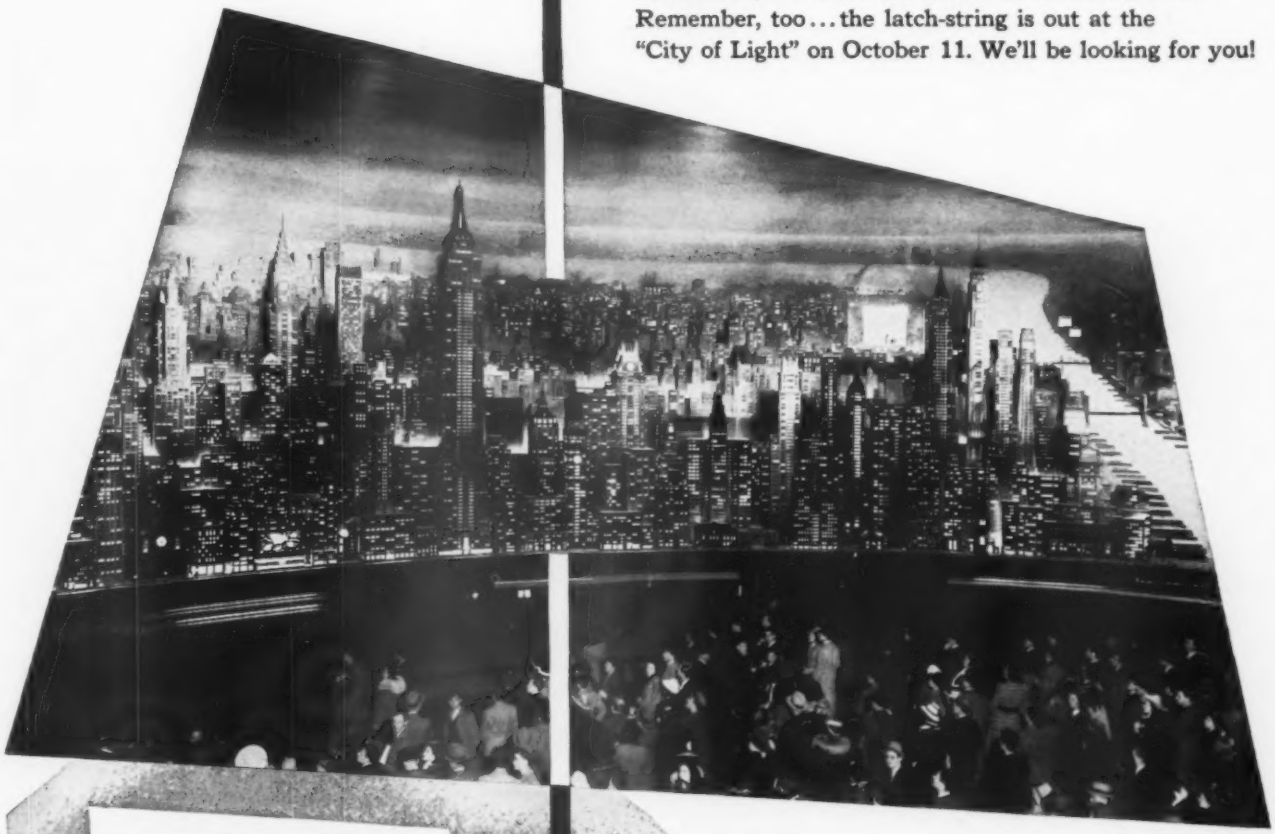
NEW YORK WORLD'S FAIR—FRIDAY, OCTOBER 11

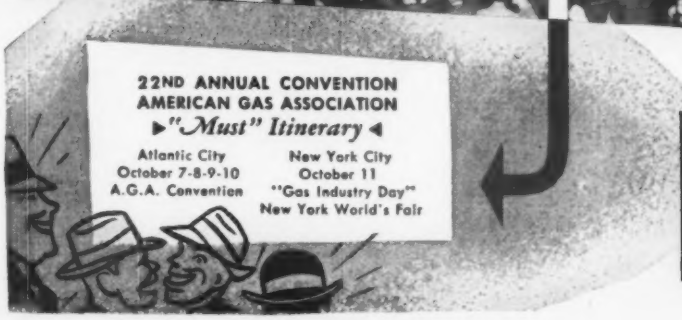
WELCOME A.G.A.

...TO "OPEN HOUSE" AT THE CITY OF LIGHT!

● A visit to the New York World's Fair is "part of the Convention"... especially this year when Friday, October 11, has been set aside as Gas Industry Day. So hop train or car and come on up! You'll be sure of a good time... and a friendly welcome at Consolidated Edison's "City of Light."

In fact we're planning "open house" for A.G.A. delegates. We've made special plans for your entertainment including a reserved seat at the world's largest "dio-drama"... showing how Consolidated Edison serves the world's greatest city with gas, electric and steam service. You'll want to see all the changes and improvements in Gas Wonderland, one of the most striking exhibits at the Fair. And then there's all the rest of the Fair... 1,216 acres of it. Remember, the Fair closes forever on October 27. Remember, too... the latch-string is out at the "City of Light" on October 11. We'll be looking for you!



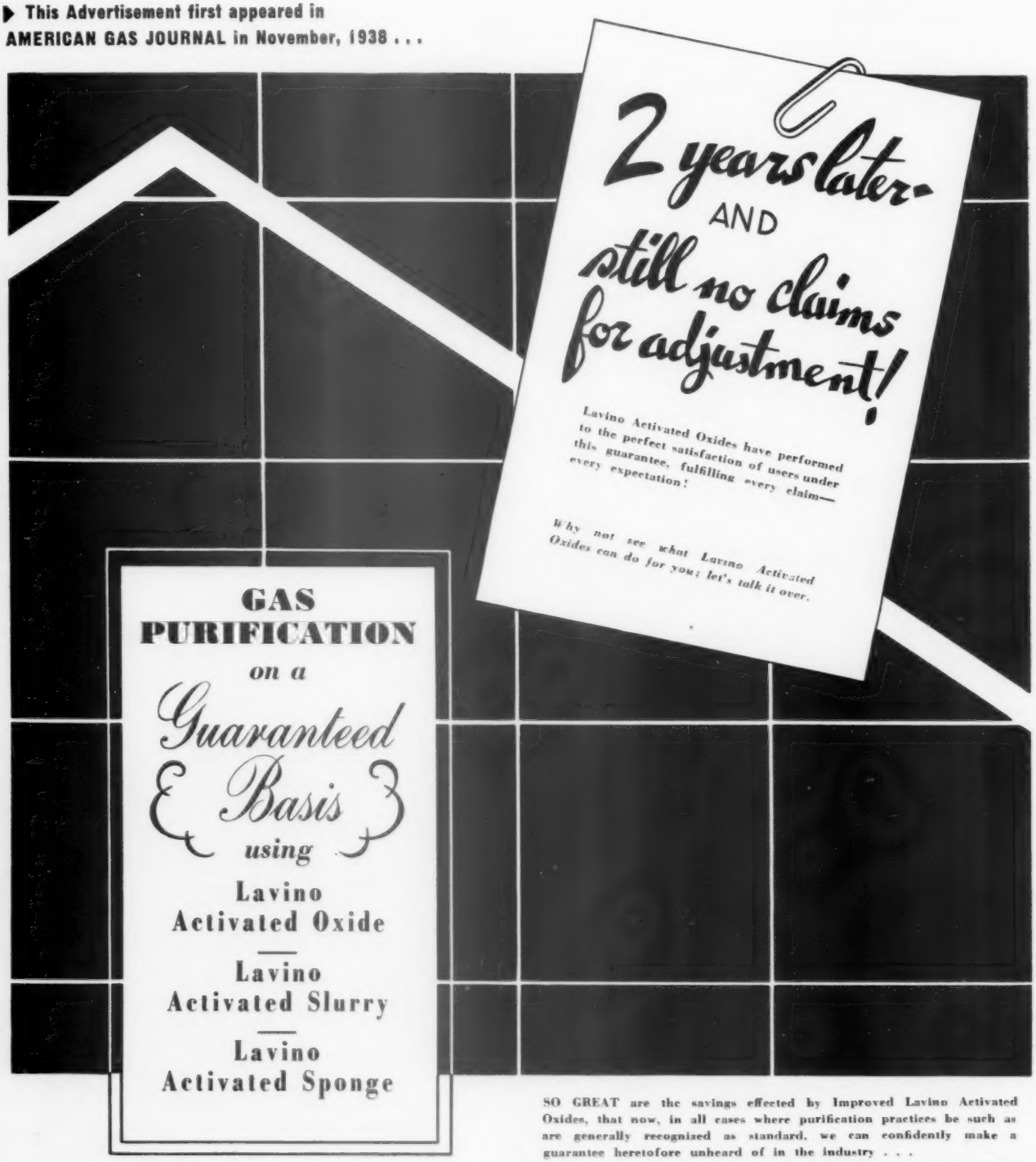


SERVICE

CONSOLIDATED EDISON

SYSTEM COMPANIES

▶ **This Advertisement first appeared in AMERICAN GAS JOURNAL in November, 1938 . . .**


2 years later-
AND
still no claims for adjustment!
Lavino Activated Oxides have performed to the perfect satisfaction of users under this guarantee, fulfilling every claim—every expectation!
Why not see what Lavino Activated Oxides can do for you; let's talk it over.
GAS PURIFICATION
on a
Guaranteed Basis
using
Lavino Activated Oxide
Lavino Activated Slurry
Lavino Activated Sponge

AS THE RESULT of intensive research over an extended period of time, we are able to announce that improvements of signal importance now have been made in Lavino Activated Oxides. The results obtained with these improved materials are such that *we do not believe you will find that they have even a close rival* in point of cost, performance and savings.

NEW SAVINGS are made possible by improved Lavino Activated Oxides—greater than ever before. The improved material removes more sulphur per pound of oxide—purifies an even greater number of cubic feet of gas per pound of oxide . . . and, as always, saves on cost of handling, too.

SO GREAT are the savings effected by Improved Lavino Activated Oxides, that now, in all cases where purification practices be such as are generally recognized as standard, we can confidently make a guarantee heretofore unheard of in the industry . . .

⟹ We now offer Lavino Activated Oxides with a definite, written GUARANTEE of cost per pound of sulphur removed.

Though it is impossible, because of varying conditions of use in the industry to make, here, a blanket guarantee of cost, covering all cases, your written guarantee will *specify definitely* your maximum cost per pound of sulphur removed *with the methods prevailing in your own plant.* And, to get your own guarantee is easy; a brief note to us will do it.

E. J. Lavino and COMPANY
1528 Walnut St., Philadelphia, Pa.

Operating Division "Wrinkles"

By

S. F. McCallister

The Twin State Gas and Electric Company

IN THE DAILY operation of Gas Companies there are many ideas used to expedite or improve the efficiency of the operation being performed. It may take the form of a special tool, designed by some individual connected with the work, and home-made or may be a commercially supplied product which is little known or not generally used for that operation, or it may simply consist of a way of doing something which can be considered to be better than some other. These little ideas can be called "Wrinkles".

Many of the operating departments of Member Companies of this Association have such "wrinkles" in use but yet are not generally known outside of that Company.

Having decided that there might be advantages in distributing more generally the ideas in use by the various Companies, the Distribution Committee circularized the managers of the Member Companies and asked that such "wrinkles", as might be available, be sent in

We received replies from 12 Companies. Two had nothing to offer, but the other ten contributed some 40 odd ideas.

Only two of the ideas contributed were applicable to the Production Departments. The rest were for street work, meter shop and appliance service.

Full details are given on the displays so I shall give only a brief description of them.

The first display shows two "wrinkles" for the Production Department.

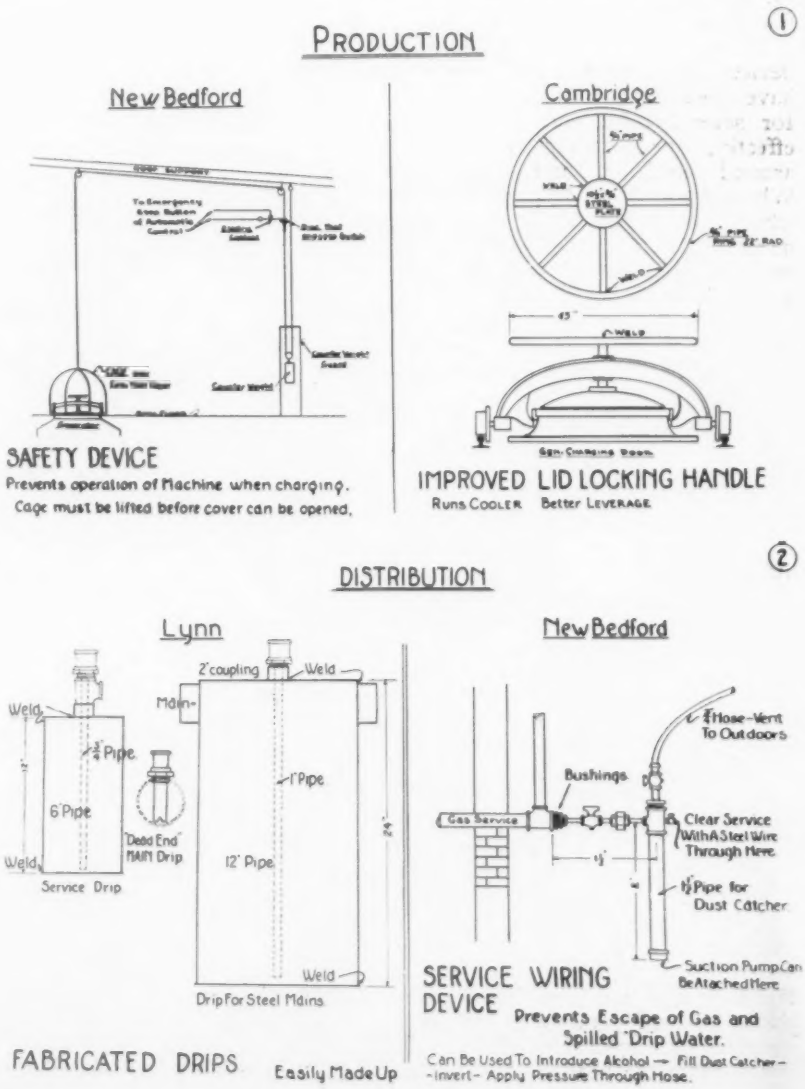
From New Bedford we have a scheme for preventing the operation of a water gas machine when the coaling door is open, as might be occasioned by the operator failing to shut down the automatic control before opening the door.—A switch in the electric circuit of the control is opened by a linkage to a cage set over the coaling door. This cage must be removed, by lifting vertically, before the door can be opened. When raised the cage is held out of the way by a counterweight and in this position the circuit is open and the machine can not be started until it is replaced over the door.

Cambridge has furnished a drawing for an improved type of locking handle for generator coaling doors. As previously installed, the tee handle had to be very short to give clearance to the weight larry and handles ran very hot.—By replacing the tee handle with a light wheel, fabricated of pipe as shown in the drawing, a cool handle, improved leverage, and increased speed of operation were obtained.

Display Number 2 shows designs and photograph of fabricated drips as made up at Lynn and used on services and small mains.

Also on this card is a drawing of a device used at New Bedford in wiring low pressure service pipes. They report that the use of this device prevents an excess amount of gas from entering the building during the operation and it catches rust and drip water eliminating odor from drip spilled on the floor. It can also be used for the introduction of alcohol as is shown on the display.

Paper presented at Spring Meeting, Operating Division, New England Gas Association, Newport, R. I., June 7th, 1940.



The third display shows a design for a compressed air operated aeration tool, as contributed by New Haven. The purpose of this is to remove gas from the ground around a leak area, and an interesting point of the design is the use of a standard non-bypass tee for the ejector part.

Also shown is a photo of a similar device using a Hancock Ejector. We have been using this in Brattleboro for several years and find it very effective for clearing the ground around shrubbery and tree roots. Where a small leak is encountered which shows the same intensity in a number of bar holes, the use of this tool will quickly locate the hole nearest the leak.

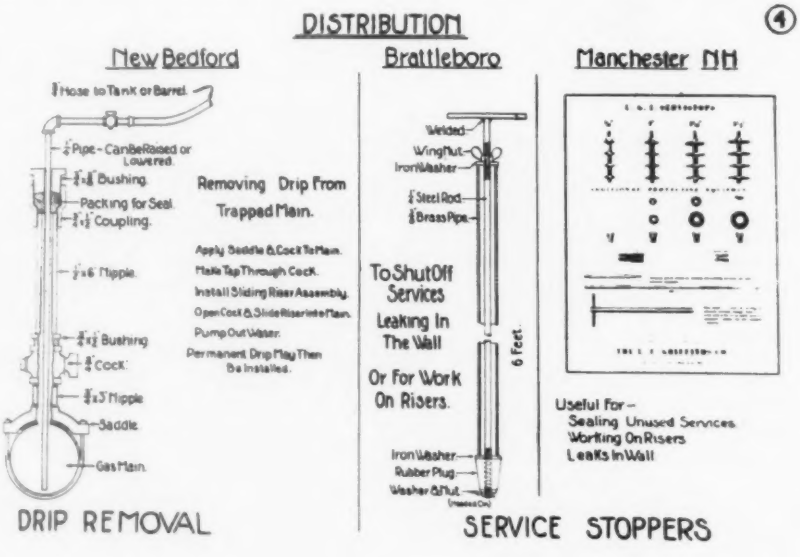
On the same display Lynn calls attention to the compressed air operated "Air-Mover", which they report is being used successfully to quickly vent cellars, manholes and the ground after the occurrence of a street leak. This is a commercially supplied device which seems to have, as yet, been little used by the industry.

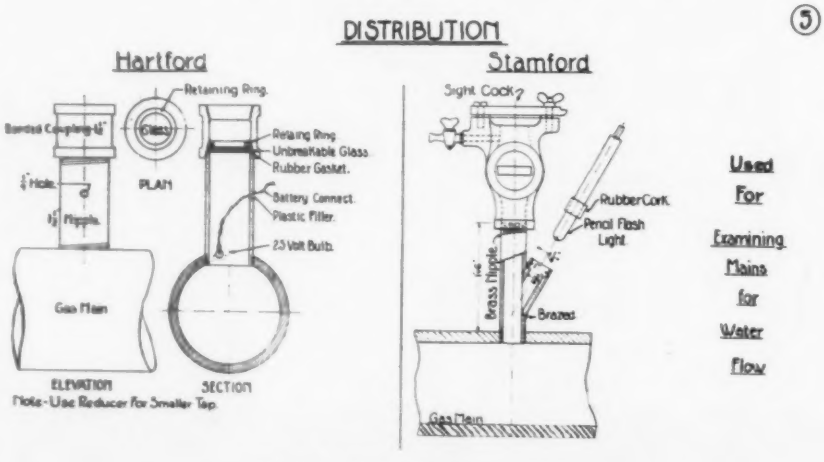
Display Number 4 outlines a method of drip removal from trapped mains as used in New Bedford. A saddle and cock assembly is first applied to the main and then the main is drilled through the cock. On the removal of the drill the cock is closed and an assembly incorporating a sliding pipe is installed on the cock. On opening the cock the sliding pipe can be lowered to the bottom of the main and the condensation pumped out. This method avoids subjecting the workmen to escape of gas and spatter of drip oil.

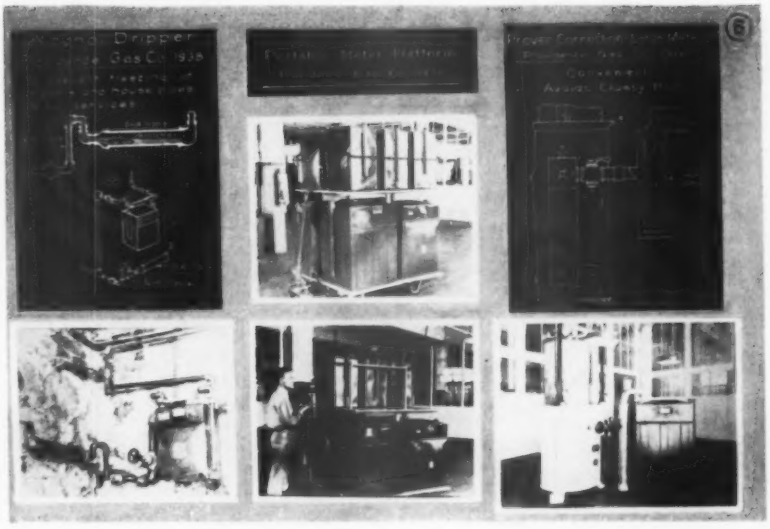
This card also shows a drawing of an expansion type of service stopper as made at Brattleboro. This is six feet long and has been found valuable to shut off gas flow on ¾" service pipes leaking in the wall. It is inserted from the head of the service and goes well back beyond the leak, stopping it at once. It has been used in cases of broken drip rods by inserting from the street surface before digging up.

Manchester calls attention to a commercial device which seems little known. It is called the "Servistop" and was introduced as a sealing device to be inserted into an unused service pipe to shut off gas and prevent theft. It consists of a series of rubber washers held on a rod by spacer pieces and is inserted from the head of the service, the washers being sufficiently flexible to allow insertion through a reducing tee. It can be placed back in the service as much as four feet by means of a special tool. Manchester reports that they find them useful to shut off gas flow where work is to be done on service risers and for emergency shut off where pipe is leaking in the wall.

The next card, Number 5, shows two designs for home-made devices for use when it is necessary to examine the interior of a main to detect water flow. These devices make such work possible without subjecting the workmen to escaping gas, dirt, dust, etc. These designs were supplied by Hartford and Stamford; and while







the basic idea is the same, the designs are very different.

Display Number 6, furnished by Providence, shows a very ingenious scheme for feeding alcohol constantly to a piping system subject to freeze ups and thus prevent interruption of the service and calls for service men.

There are also photographs of a handy adjustable meter rack for use in transporting meters in the shop.

This card also shows drawings and photos of equipment developed to eliminate the prover hose in testing the larger sized meters. Such a hose must of necessity be of large diameter and is cumbersome to handle. The device shown utilizes a seal and a sliding connection working in it which can be quickly raised or lowered to fit the meter under test.

The next card, Number 7, shows a drawing from New Haven for a device to eliminate the prover hose in the testing of the smaller meters. It also utilizes a seal and sliding connection, which when disconnected, is held high enough to clear the meter by a spring. New Haven states that its use is a distinct aid in speeding up this work, and eliminates entirely the possibility of a false proof due to a leaking prover hose.

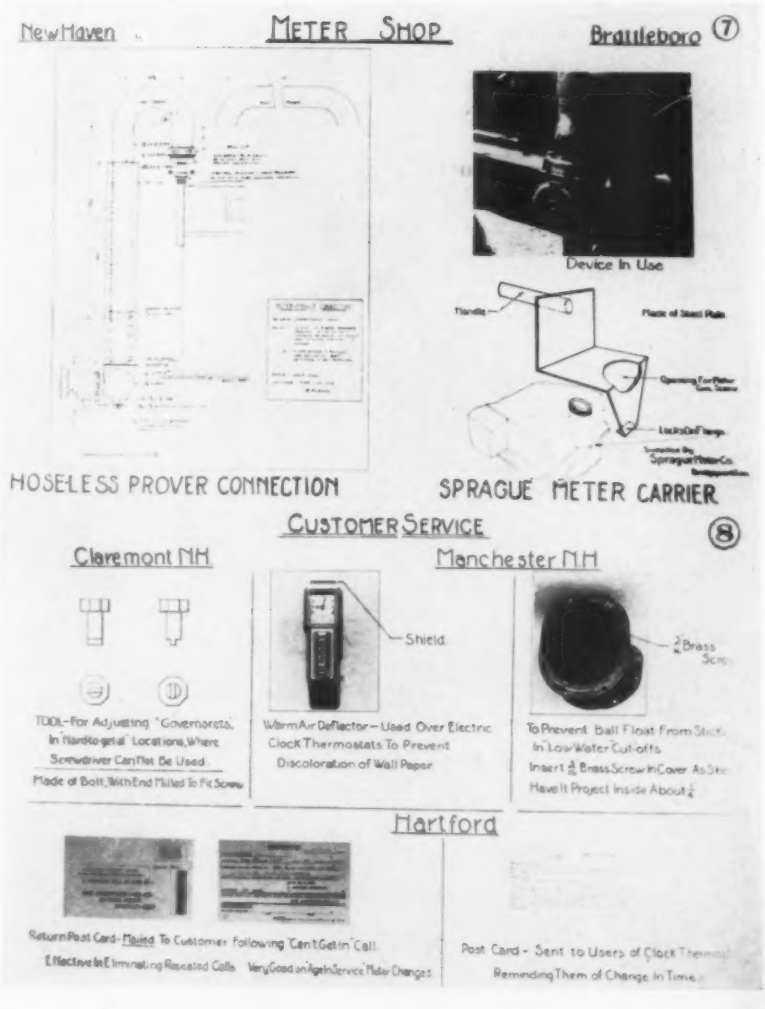
The other item on this card is a commercial device for carrying Sprague C. I. Meters. Due to their weight and shape, this type of meter can be very much more easily handled with this tool than without. We have been using them at Brattleboro with much satisfaction.

We have now reached ideas applicable to customer service work. Card Number 8 shows several ideas in this field.

Frequently governoretts on Electrolux have been so installed that it is difficult to adjust them with a screw driver due to there being insufficient clearance above them. Claremont, N. H., contributes an idea for an easily made tool that will do this work quickly.

Manchester, N. H., states that they had difficulty with the damaging of valuable wall paper over an electric clock thermostat by reason of a smudge caused by the warm air rising from the clock motor. This trouble was ended by the installation of a small deflector over the top of the clock, as shown in the photograph.

Manchester also advises that when inspection showed that a number of low water cut-offs on heating boilers were inoperative due to the ball float sticking to the top of the casing, they cured the trouble by the insertion of a brass screw through the top of the



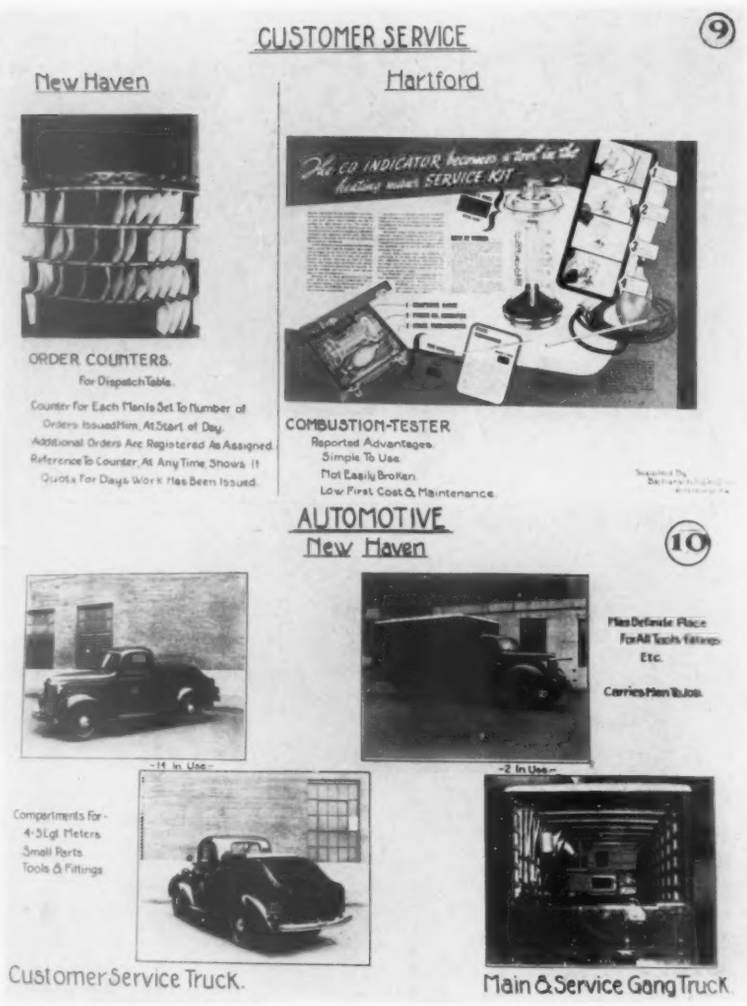
casting, allowing it to project about ¼" inside. A photograph of this is shown.

Display Number 9 shows a photograph of order counters used on the Dispatching Table at New Haven to show the amount of orders assigned each man. At the beginning of the day the counter for each man is set with the number of orders issued him, and as additional orders are dispatched they are registered on the counters. Reference to the counters at any time will show if that man has been assigned a full quota of work for the day.

Hartford advises that they find the use of the "Fyrite" CO_2 indicator to be very satisfactory for combustion testing work. It is said to be quicker to use, easier to read and costs only a fraction of a regular Oraat apparatus. Maintenance costs are low, and it is practically unbreakable.

The balance of the displays, such as No. 10, are given over to automotive ideas.

This shows two views each of special body trucks used in New Haven for customer service work and for the street gang. These bodies have been designed for the work on which they are used, and have compartments and definite places for all tools, equipment and parts needed.



Industrial Research Bulletin on Furnace Atmospheres

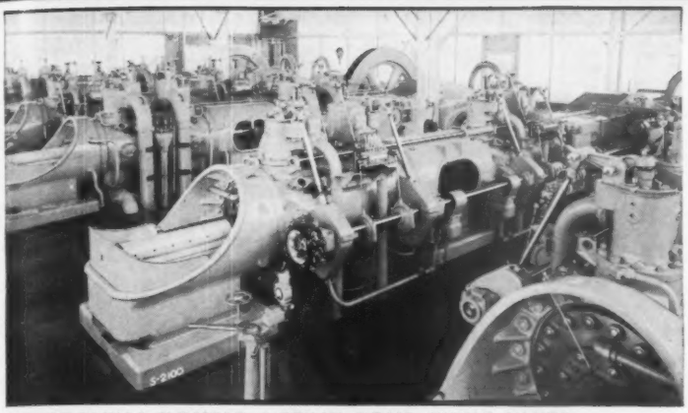
The American Gas Association through its Committee on Industrial Gas Research headed by Mr. F. J. Rutledge, Vice President of the United Gas Improvement Company, has, for a number of years, been investigating many phases of industrial gas combustion with the object of providing data and other useful information which might be helpful in furthering the use of gas for industrial processes. From time to time, summaries of these studies are published and distributed to the industry. Bulletin No. 11, "Composition of Furnace Atmospheres Resulting From Partial Combustion of Gaseous Fuels," is the latest investigation conducted at the Laboratories. This publication summarizes all preliminary phases of this study, Project No. 36, and should be of considerable value to the industry.

The new bulletin embodies data obtained from over 2500 observations of flue gas temperatures, gas rates, aerations, and more than 750 complete flue gas analyses. Likewise, it contains original data showing relative concentrations of different flue gas constituents resulting from combustion of three different fuel gases encompassing nearly the entire range of variations in typical city gases when that air supply was varied from that required for complete combustion to the lowest which would support combustion. Special sections are devoted to discussion of carbon monoxide-hydrogen ratios, carbon monoxide-carbon dioxide ratios, and occurrence of free oxygen in flue products. Effects of both combustion wall temperature and flue gas temperature on resulting constituents are also noted, together with the relationship between composition of fuel gas and resulting flue products.

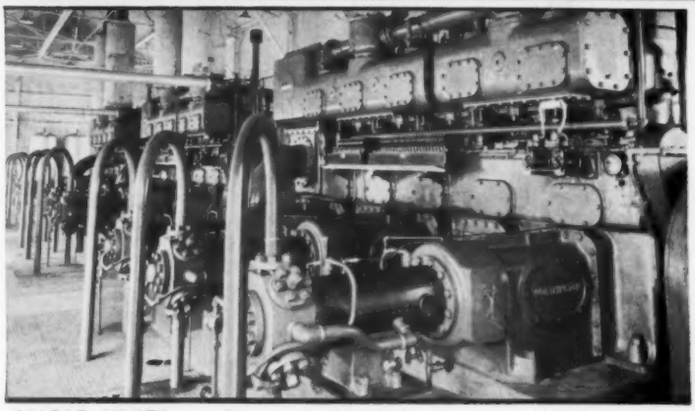
In addition, data are presented showing effect of air supplied for combustion on the volumes of the various flue constituents per cu. ft. of gas burned, maximum flue gas temperatures developed, amount of heat in flue products at various temperatures, amount of gas burned per unit of combustion space, and flame length resulting under these conditions. It is interesting to report that approximately 5 million Btu. per hr. per cu. ft. of combustion space could be burned with a minimum amount of air required to support combustion of natural gas, and about 4 million Btu per hr. per cu. ft. of combustion space for manufactured gas under the same conditions. A practical interpretation of these observations, as well as a discussion of methods of producing controlled furnace atmospheres of desired composition, together with such relating factors as design of burner and combustion sample for operation under these reducing conditions rounds out the data presented.

A COMPREHENSIVE SERVICE TO THE GAS INDUSTRY

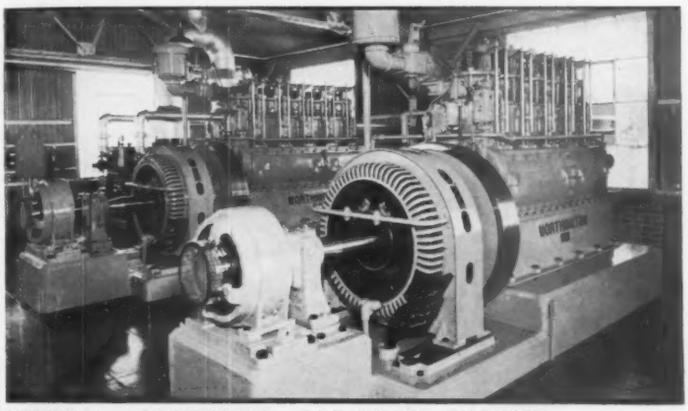
TRANSPORTATION • DISTRIBUTION • POWER GENERATION



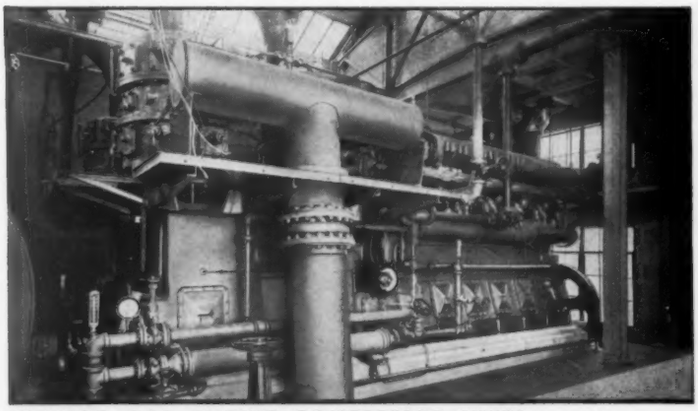
HORIZONTAL DOUBLE-ACTING FOUR-CYCLE UNITS . . . for heavy duty main line service in the larger capacities.



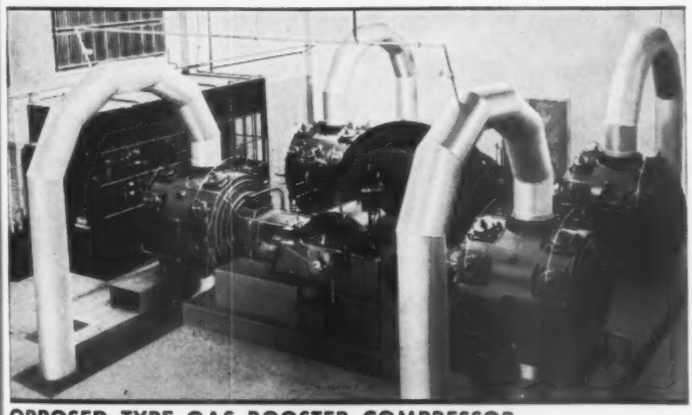
ANGLE UNITS . . . for main line, booster and distribution service, in medium capacities.



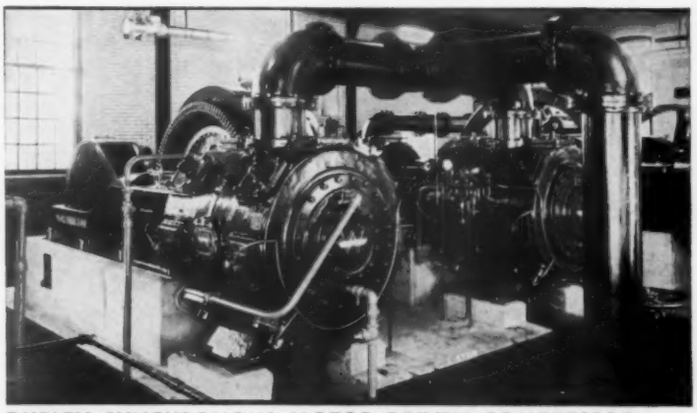
VERTICAL CONVERTIBLE GAS-DIESEL ENGINES . . . for auxiliary station service.



UNIBLOC GAS ENGINE COMPRESSOR UNITS . . . where space is limited . . . for gas distribution service.



OPPOSED TYPE GAS BOOSTER COMPRESSOR . . . design gives minimum shaking forces . . . for bad soil conditions.



DUPLEX SYNCHRONOUS MOTOR DRIVEN COMPRESSOR . . . for gas distribution service.

THE installations shown here exemplify the comprehensive coverage of Worthington power and pumping equipment for the gas industry.

For expanding the market for gas, Worthington power units are available in the convertible type from 50 to 1500 horsepower capacity. The convertible feature provides definite insurance against failure of the fuel supply, as a quick change-over can be made in a few hours at low cost, and the engines will give the highest economy on either gas or oil.

WORTHINGTON PUMP AND MACHINERY CORPORATION

GCO-4 General Offices: **HARRISON, NEW JERSEY** *Branch Offices and Representatives in Principal Cities throughout the World*

WORTHINGTON

Let Us Be Prepared!

We quote in full the leading editorial in the September 4, 1940, issue of the *Gas Journal (London)*. It needs no comment by us.

National Preparedness is the way through which *we* may hope to avoid situations as the one here pictured.

Let us be prepared not only as a Nation but as an Industry!

* * * * * *

It Does Happen

"The war becomes more intense. That was to be expected. A few days ago we thought we would enjoy an August trip to the coast. We felt honoured on the journey by a Nazi escort. He did no damage (we were travelling by train), nor did he affect morale. And so to the coast of jolly England. We thought we were *au fait* with the position of most gas undertakings in this country, but in this particular instance even journalistic buoyancy was somewhat calmed down on entrance to the town.

"Quietude reigned; merely quietude. We asked the way to the gas-works, for the scene—once well known — was unfamiliar. We enquired of a postman; he said simply —you take first left round the 'pub.' that was. It happened to be, or to have been, a temperance establishment. That is a minor point in our little story. So we turned round the 'pub, that was' and wended our way to our goal—the gas-works. And we came to the conclusion that the slick pen is not mightier than the sword, but that a steady pen might prove helpful. We arrived at the works.

"The engineer there acted as a friend; for no soonor were we on the works—actually we were poised as ballet dancers on the crown of a gasholder—than he said you *must* 'take cover.' In issuing this command he had forgotten not one of his workmen. The home service demonstrator, a young and courageous girl, handed us all a sausage and gave us a pleasant smile. We retired behind sandbags, just before 24 Nazi planes, at that moment at 5,000 ft. or thereabouts, decided to dive. Dive they did! They dropped a few bombs indiscriminately and, with bombast, circled and went inland. Naturally we were rather disgusted with an exhibition of efficient formation flying on the part of doubtless young pilots, without military objective. A life here and there; a building here and there. But from the point of winning the war — it seemed meaningless.

"We have mentioned our approach to the gas-works. It was chastening; at the same time it was wonderfully heartening. Signs such as 'Business as Usual—we hope,' 'Bring your joints here to be cooked; we have the fuel,' met the eye. Altogether not merely a sense of camaraderie, but a complete expression of hope. The British temperament is uncannily enduring. The Nazis cannot understand it, but they will eventually feel its effects.

"We seem, however, to be getting somewhat away from the point, our visit to the gas-works. The engineer at this particular works is responsible for gas supply, and he is also responsible for water supply. At the time of our vivid visit there was no gas in his area of supply; and a 'no-gas' idea in these modern times is unwelcome—to say the very least. It was only a few days before our visit to this town 'somewhere in England' (we think that readers will have a notion where it is) that the gas-works engaged the attention of the enemy. We happen to know, from first eye, what resulted from this attention. Bombs of considerable calibre—'plonk' on the works. A spot of flame from two gasholders—and we would emphasize flame, *not* explosion—strange, almost incredible effects of 'blast,' and then a return of the Nazis to machine-gun those who were extinguishing the flames. This is a pretty story. Also, it is true.

"We were impressed with the safety precautions taken over two years at those works. Little that could have been done had been left undone. These precautions have saved money, and they have saved lives. Yet we wonder whether reasonable precautions such as these we are talking about have been taken by gas-works throughout the country. As we write this the warning siren sounds again.

"When we were on those works a car drew in. It was chauffeur-driven, and a posse of fitters stepped out to reinforce those normally employed on the works. One said that the engineer from a neighbouring undertaking who had freely lent his aid was a 'gentleman.' But, said the engineer of the works which we visited, I always knew that. We all laughed. Co-operation became more evident. It was evinced in so many ways. It was evinced by the Gas Industry as a whole. Keenness to help was not the prerogative of gas engineers in the surrounding districts. The manufacturers of plant were on the spot. That they were a little more optimistic about immediate supply of gas to the town than we were matters nothing. Everybody helping; that was the point.

"Slogans may or may not have value. We will, however, take a bow at a venture and coin one: 'Gas-works are manned by workers with "guts"—not forgetting the engineer.' Is every gas-works in this country satisfied with the precautions it has taken against this type of bombing performance? Is every gas-works certain that it has sufficient spare parts available against emergency? We think we know the answer to this composite question, and we merely say: Take heed. In saying this we finish on the one dominant note of admiration for the co-operation within our Industry."

* * * * * *

"The town in question—it is no secret—referred to in our preceding little note is Ramsgate. Within a matter of days—it may be hours—other gas undertakings may be experiencing a similar *temporary* disturbance. We italicize 'temporary' because of the work, co-operative work, which is being put in to restore gas comfort to the inhabitants of that particular town. The dwellers there, as we have endeavoured to indicate, are brave and enduring beyond question. There is not a grumble in that town, only a sense of ultimate victory; and in this endurance women are playing their part gloriously."

Star performance at the heart of the gas appliance—The BURNER!

Give Your Gas Appliances the Advantage Of BARBER BURNER Equipment

A 20-year record of outstanding leadership in gas burner design, and the fact that approximately 175 nationally known appliance manufacturers have adopted Barber Burners as standard equipment for their products, amply demonstrate the satisfaction in service and the fuel economy for which Barber Burners are recognized everywhere.

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Only a few *typical* Barber designs shown here. We are gas burner specialists, and offer you freely our laboratory and engineering facilities on the design and manufacture of burner units appropriate for your specific purposes. Write for complete Catalog and Price List on Burner Units for Gas Appliances, Conversion Burners for Furnaces and Boilers, and Gas Pressure Regulators.

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Address Michigan Inquiries to The Barber Gas Burner Co. of Michigan, 4475 Cass Ave., Detroit

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TO HEALTH-CONDITION AIR IN HOMES

THE NEW MONMOUTH HUMIDITY CONDITIONER

Size 10" wide, 17" deep, 35½" high, Installation very simple.

★

Every radiator heated home in your territory is an immediate prospect.

★

Every conditioner sold brings 20,000 cu. ft. more steady, day and night consumption of manufactured gas per season.

★

The gas used reduces fuel consumed for heating and gives owner benefits worth many times the remaining cost.

★

Brings radiator heating plants up to date. Adds the most important feature of winter air conditioning at a fraction of the cost of the heating plant.

★

Provides an entering wedge for gas heating.

★

EVERY GAS MAN SHOULD KNOW THESE FACTS

For years owners of radiator heated homes have asked for a method to properly and automatically humidify the dry air in their homes. The Monmouth Conditioner fulfills this demand for a practical, high grade humidifier at a price that owners of such homes can readily pay.

When owners of radiator heated homes built their homes they paid extra to get the best heat then obtainable. They are the type who want and will pay for the best. Field research shows that such home owners much more readily buy a good humidifier than owners of warm air heated homes buy a cheap humidifier.

Gas appliance sales managers, salesmen, engineers, all employers are invited to write for complete information.

MONMOUTH PRODUCTS CO.

1939 E. 61st St., Cleveland, Ohio

MONMOUTH

The Greatest Name in Humidification

Humidifying Air in Homes A New Gas Load

By

O. J. Kuenhold

Cleveland, Ohio

A NEW SALES FIELD for gas is looming on the horizon which presents features of unusual interest to the gas industry. This new use for gas is to re-humidify the air in heated homes.

Gas fired humidifiers are especially suitable for radiator heated homes, in fact there is no other practical way to accomplish adequate and satisfactory humidification in homes, offices, etc. which are heated by hot water or steam radiation.

Pans on or behind radiators are inadequate unless the pans are large and practically all radiators are so equipped. Space for evaporating pans is available on few radiators. Too many are enclosed or under window seats, or located where space for a water pan of proper size is not available, or is not acceptable to the owner. Besides that it becomes quite a chore to fill a group of evaporating pans every day.

Radiator attachments which permit escape of steam from the heating system into the rooms to humidify the air are low in first cost and simple but this method has the fatal defect that all steam so escaping from the heating plant must be replaced by feeding an equal weight of water into the boiler. To humidify an average size house (½ gallon per average room per day) requires 3 tons of water per season. All this extra water fed to the heating plant introduces lime which forms incrustations and also introduces air and other elements that cause corrosion in the boiler, piping, radiators, valves, etc. Because of this, drawing steam from the heating system to humidify will prove enormously expensive in its final costs.

Humidifying methods have been tried that use the hot water or steam of the heating plant, circulated through submerged coils in water evaporating pans to supply the heat necessary to accomplish evaporation. The defect of this method is that during the mild and normal weather which exists during 90 per cent of the heating season, the steam is on intermittently in steam heating systems, and in hot water systems the water temperature is too low to cause enough evaporation. Consequently each installation must be special, rather elaborate and very carefully engineered to fit each installation. All this, with the high cost of cutting into steam or hot water mains, the special duct work required, makes the cost prohibitive and the results experimental.

In contrast to the above, consider a gas fired humidifier:—The fact that clean, easily controllable gas is used to supply the heat necessary for evaporation makes the operation completely independent of the heating plant and enormously simplifies the problem. A convenient location for the humidifier is easy to find; correct installation is a simple matter; ample evaporating capacity is on tap for any and all conditions and very satisfactory operation is practically certain.

No other means of supplying the necessary heat for vaporization can compete with gas for humidifying radiator heated homes. No other fuel or source of heat has the cleanliness, convenience, ease of control, quick response and flexibility of gas. This particular field very plainly belongs to gas. It naturally follows that the gas industry should aggressively develop it.

The question naturally arises:—How big is this field and how much and what kind of load can it bring?

There are many industrial applications for a gas fired humidifier as well as in offices, various institutions, art galleries, museums, hospitals, clinics, etc. An independently operating gas fired humidifier is the best humidifier for any direct fired conditioned air heating plant. But the particular field in which the greatest need and immediate sales field exist is for humidifying the air in radiator heated homes. For such homes no other satisfactory method of humidification exists.

There are several million radiator homes in the U. S. A. Most of them

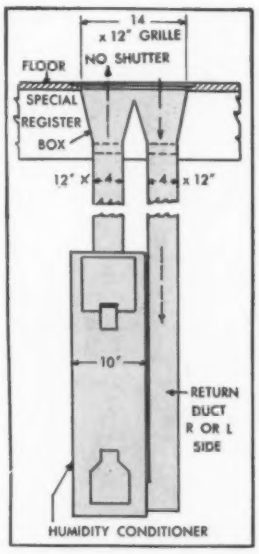

FIGURE 1

were built before conditioned air heating came into prominence and when radiator heating systems were installed in practically all of the better class homes. The occupants of radiator heated homes are as a rule well informed, progressive people. They know that the air in their homes becomes excessively dry in winter and are aware that this condition is not healthful. Many of these people want humidification, can afford to install a good humidifier and will do so if a sound practical way to properly humidify their homes is presented.

A considerable proportion of the owners of radiator heated homes would like to have conditioned air heating. Some are building new homes to get it. A few are replacing their radiator heating plant with a conditioned air heating plant. But now comes a gas fired "Humidity Conditioner" which, added to these homes, gives them the most important feature of winter air conditioning at a fraction of the cost of their heating plant. It is welcomed by many with open arms.

Now as to the gas consumption:—Adequate but not excessive humidification requires a humidity increase of about 17 per cent points in relative indoor humidity, during all mild or

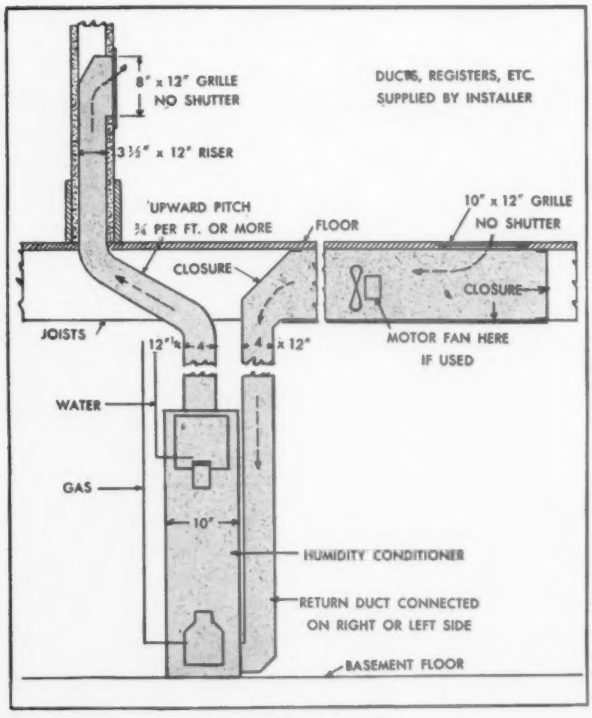

FIGURE 2

colder winter weather. Experience shows that to accomplish this it is necessary to evaporate about ½ gallon per average room per day, more or less, dependent upon how leaky or tight the house. Assuming the evaporation of 4 gallons per day per average size home, a performance chart shows that 3400 cu. ft. of manufactured gas is required per month. From the home owners standpoint a deduction should however be made from the above cost because part of the gas is used to warm the air circulated by the Humidity Conditioner and this reduces fuel for heating and in addition the humidification gives equal comfort at lower room temperature and this results in further reduction of heating costs. Assuming one dollar gas or $3.40 operating cost per month, the owners increased expenditure is some fraction of this.

Assuming only a 6 month heating season we conservatively get annual gas consumption of 20,400 C.F. gas per season per installation, ignoring the larger homes. From this the possibilities for any selected locality can be estimated. The gas consumption is not large enough to be an impediment to sales. For the moderate cost, the purchaser obtains benefits easily worth many times the cost.

It should not be overlooked that a gas fired Humidity Conditioner, properly handled by sales departments, can be the entering wedge for gas heating.

The operating principle of the Monmouth Humidity Conditioner is to moderately warm air so that it will circulate and so that it can hold considerable water vapor without chance of condensation in ducts and then to add the water vapor. Circulation is natural through a supply and return duct, no fan being necessary except where ducts are extra long.

The circulated air serves as a medium to carry the invisible water vapor into a room. This vapor then separates and spreads by diffusion, independently of air circulation, in all directions to all rooms open to the receiving room or adjoining rooms.

Figure 1 shows an installation in which the supply and return ducts are connected to a special Monmouth two-way register box and any 14 x 12 register grille. The same register supplies and returns air.

Figure 2 shows a more elaborate installation, using space between floor joists as part of the return duct. This can be varied in accordance with standard practice in duct work.

Figure 3 shows evaporator and water level control assembly. Water level and drip feed rate are both plainly visible in the Flotrol control. So accurately does this maintain the water level that the rate of drip feed will exactly equal the evaporating rate. The owner can therefore see exactly how much water is being evaporated and he has evidence before him which is continuous proof how well the conditioner is operating.

A large hand hole with removable cover gives access for cleaning the vitreous enameled pan. The perforated cover of the pan can be lifted off. The entire pan can be easily removed.

Figure 4 shows the burner and gas control assembly which can easily be

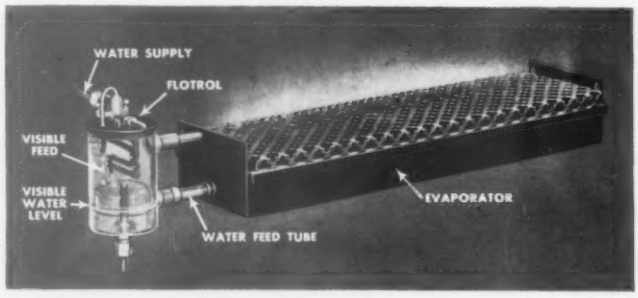

FIGURE 3

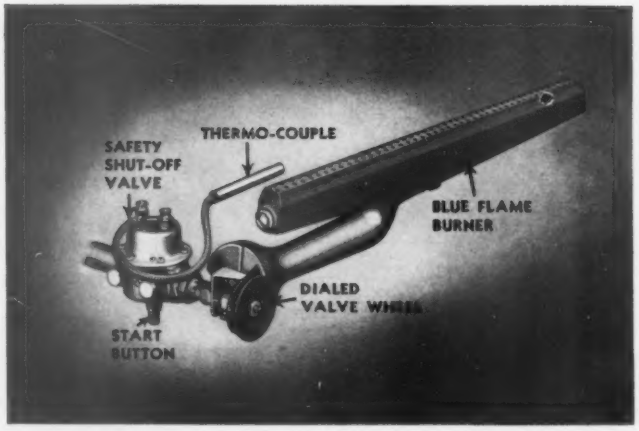

FIGURE 4

withdrawn from the conditioner. The owner simply sets the gas rate by means of a dialed valve wheel to give him correct evaporating rate and humidity increase for weather at about freezing point. This setting will then be correct for all other winter weather and the humidity will be automatically graduated downward as weather becomes colder, which is ideal, eliminating excessive condensation on single windows and all condensation on outside doors or in outside walls. This automatic graduation of humidity to fit existing weather is accomplished without mechanism of any kind. It is done by Nature's laws of humidity which never fail.

The burner has 89 flame ports, No. 42 drill through ½" of solid metal, enabling the flame to be turned down exceptionally low without flash back. A magnetic thermo-couple valve snaps off all gas in event of accidental extinguishment or if the burner is turned down extremely and unsafely low.

The operation is very quiet. The evaporation is accomplished without boiling the water in the pan until more than 5½ gallons of water per day are vaporized, when there is a slight rushing sound, not ordinarily detectable except at the Conditioner. The conditioner weighs only 55 pounds. The sheet metal parts are bolted not welded together so that any individual part can be replaced in event of corrosion. It is shipped in a corrugated container.

Servel Sales Convention

The annual sales convention of Servel, Inc., was held October 3-5, inclusive, at the Hotel Ambassador, Atlantic City, N. J., with executives, regional and district sales managers, and other selling representatives of the company in attendance. A complete line of 1941 Servel Electrolux refrigerators was on display during the convention period.

Various departments in the company had separate booths in the hotel to present charts, plans and other printed matter pertaining to sales, advertising and promotion plans for 1941. This literature also reviewed what the company has accomplished during the past year.

After department heads had outlined the proposed activities for the coming year, "open house" was held by each department at its own booth where representatives had an opportunity to discuss 1941 plans as they pertained to each department.

$20,500,000

go to work in Expansion Program of U.G.I.

A program to fit an expanding country of rising standards and unlimited opportunities! $20,500,000 to pay for plant enlargements and renewals, improvements in equipment and methods . . . all to step up public service in full keeping with the pace of the times.

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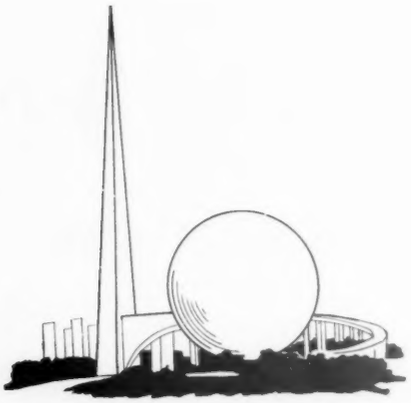
And it does more than add to pay envelopes. It multiplies buying power. When John Smith works, he becomes a *consumer!* Stores and shops and fabricators and jobbers and factories become busy, add more and bigger pay envelopes of their own . . . as John Smith and his Missus buy furniture and food, trips and trinkets, power and powder, cars and clothes, rugs and radios, the thousand and one things that modern living demands.

Thus the twenty and a half million U.G.I. "Dinner-Pail" Dollars go their helpful rounds, building—not merely a better public service—but better living, a fuller life, more happiness for thousands.

The

UNITED GAS IMPROVEMENT COMPANY

Dedicated to Public Service Since 1882



Gas Flares at the Aquacade Add to Striking Finale

Tank Water and Showers Also Gas Heated

Eclipsing all features in the Amusement Area at the New York World's Fair is the Aquacade where huge gas flares are an important feature in the grand finale of this show which goes on at 3, 5, 8:30 and 10:45 p.m., each show lasting for an hour and ten minutes.

Those who visit the Fair on Gas Industry Day, October 11th, will be much impressed by the spectacle which has already been viewed by more than 2½ million people this year to date.

As at the Court of Flame in Gas Wonderland the nightly exhibit of fire and water at the Lagoon of Nations, the effect of the gas flares in the Aquacade is indeed awe-inspiring.

In the finale to this show, the entire cast of over 400 including "Aquagals" and "Aquabeaux," appear in brilliant gold costumes, and pass in review against a setting of glittering gold. Then the Aquagals dive into the pool and the water curtain and fountains come to life. The twelve columns of flame, shoot skyward from the mouths of Grecian urns atop the 60 foot stage setting. With this, the chorus and orchestra join in a crescendo of voices and instruments that thrills spectators beyond description. Then stage and house lights are gradually lowered and the entire setting is left bathed in the soft glow of the luminous gas flares.

Since the show is an outdoor affair, the chief gas engineering problem presented was to obtain a strong enough flow of gas which would not allow the flares to flatten out in the wind.

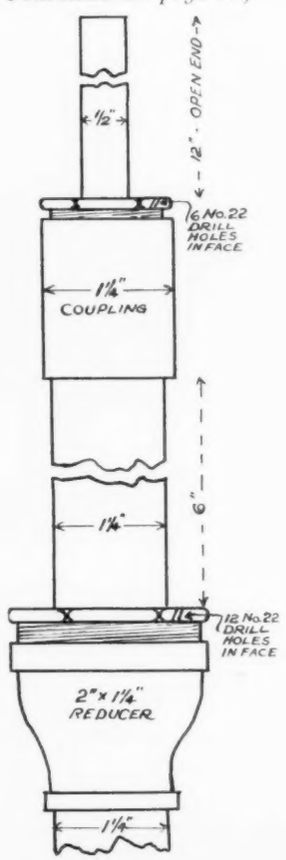
High pressure burners could not be used because of the peculiarity of piping layout backstage and because the poor load factor involved did not warrant increasing normal transmission line pressure. Standard bowl burners were not feasible since the burners are located at the top of the stage setting, directly in the path of the winds.

Carl H. Krause, assistant to the superintendent of the Distribution Department of Brooklyn Union Gas Company, designed and tested a stepped type pipe burner which succeeded in overcoming the wind handicap. These burners, assembled from standard malleable fittings as shown in the diagram, give a ten-foot flame in still air, a six- to eight-foot flame in a moderate wind, and a minimum of a three and one-half to a four-foot flame in a strong wind with a manifold pressure of one inch water column.

The ignition for the burners is supplied by a Partlow electric coil type heater pilot. An anti-flashback chamber is provided on each burner

(Continued on page 90)

The 12 large gas flares which provide a soft warm light for the finale of the nightly performances in the Aquacade at the World's Fair. Special burners were designed to provide flames which would not "lay down", even in a strong wind. In still air the flames rise to a height of ten feet.



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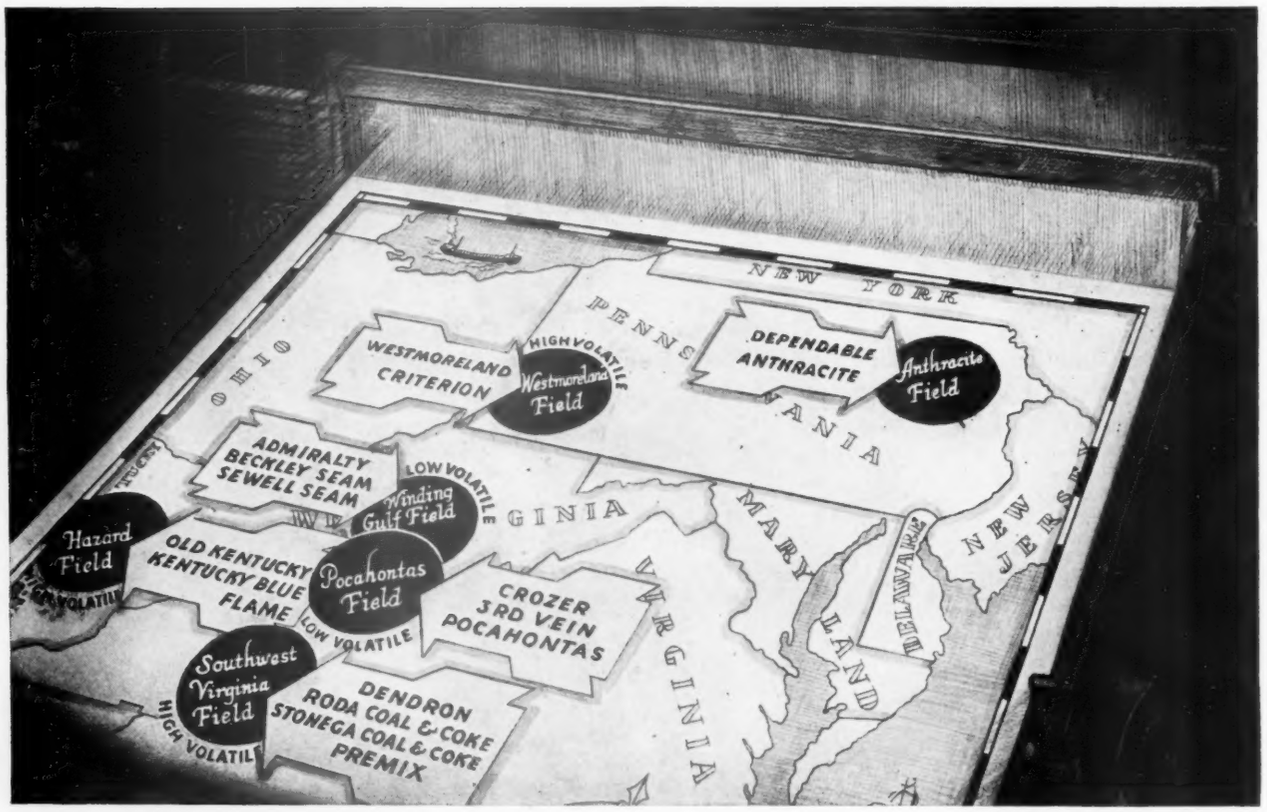

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GENERAL COAL

Practical Tests and Kinks

By

W. F. Schaphorst, M.E.

Newark, N. J.

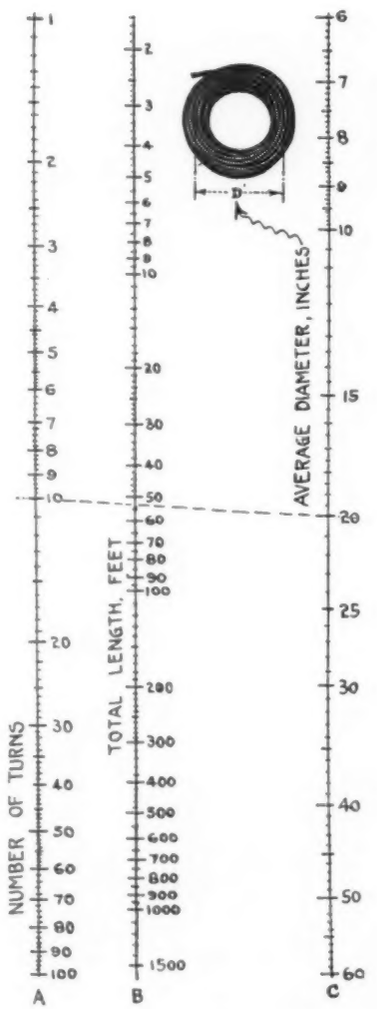
The Length of Anything Coiled or Rolled Up

The man who handles wire cable, rope, hose, etc., will find the accompanying chart useful for finding the length in feet of anything of the sort that is rolled up, such as rolled-up cable cord, lead pipe, tubing, etc. All that is necessary is to count the number of turns and measure the "average" diameter as shown on the chart, and then lay a straight-edge across the chart as indicated by the dotted line drawn in the sketch. The answer is immediately found in Column B.

For example: To find how many feet in a rolled-up cable whose average diameter is 20 in., and in which there are 10 turns, connect the 10 in Column A with the 20 in Column C as the dotted line shows, and the intersection with the middle Column will give the answer—53 feet.

The range of the chart, it will be noted, is large enough to care for most of the conditions to be found in ordinary practice.

The chart can be used "backward" as well. For instance, if it is desired to take along about 300 feet of a coiled up article and the workman wants to know how many turns to take, a straight-edge laid across 300 on the middle scale will tell how large the coil should be made and the number of turns required in order to contain the desired length. Paste this scale on a card and hang it up in a convenient place.



Simple Test for Oil in Boiler Water

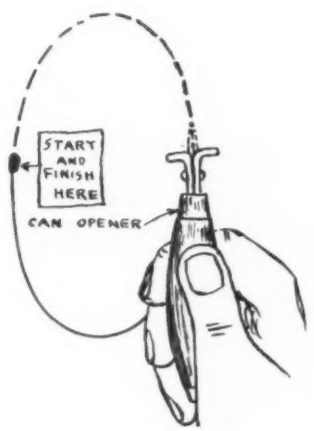
Here is a valuable kink that was given to me the other day by a former chief chemist whose specialty was boiler waters and boiler water treatment. I am sure many others will be glad to know about it.

My chemist friend informed me that there is a really good and surprisingly simple test for oil in boiler water. Just take an ordinary clean test tube, fill it to a depth of about two inches with the feed water you want to test and shake it in your hand with your thumb over the opening for a few minutes. If at the end of a sufficient period there is an accumulation of bubbles on the surface of the water you can be almost positive that there is oil and plenty of it in the water. The test is really quite sensitive, and one which any boiler operator can perform with amazingly accurate results. If at the end of the shaking period there is no evidence of bubbles at all, you can be pretty sure that the amount of oil in the water is too little to cause any harm.

Can Opener Kink

Here is a handy kink which I recently happened on and have used successfully—the use of an ordinary can opener for cutting openings in sheet metal—openings of any shape—and even for cutting sheet metal in two. I find that for certain purposes a can opener is far superior to a pair of metal shears, chisel, or other methods commonly used. The objection to shears is the interference of the metal to the working hand and the fact that the metal must be bent away to some extent in order that the shears can be put through.

A can opener does not present any such interference difficulties and as a result both parts of the sheet metal—the part cut away and the part remaining—do not become bent.

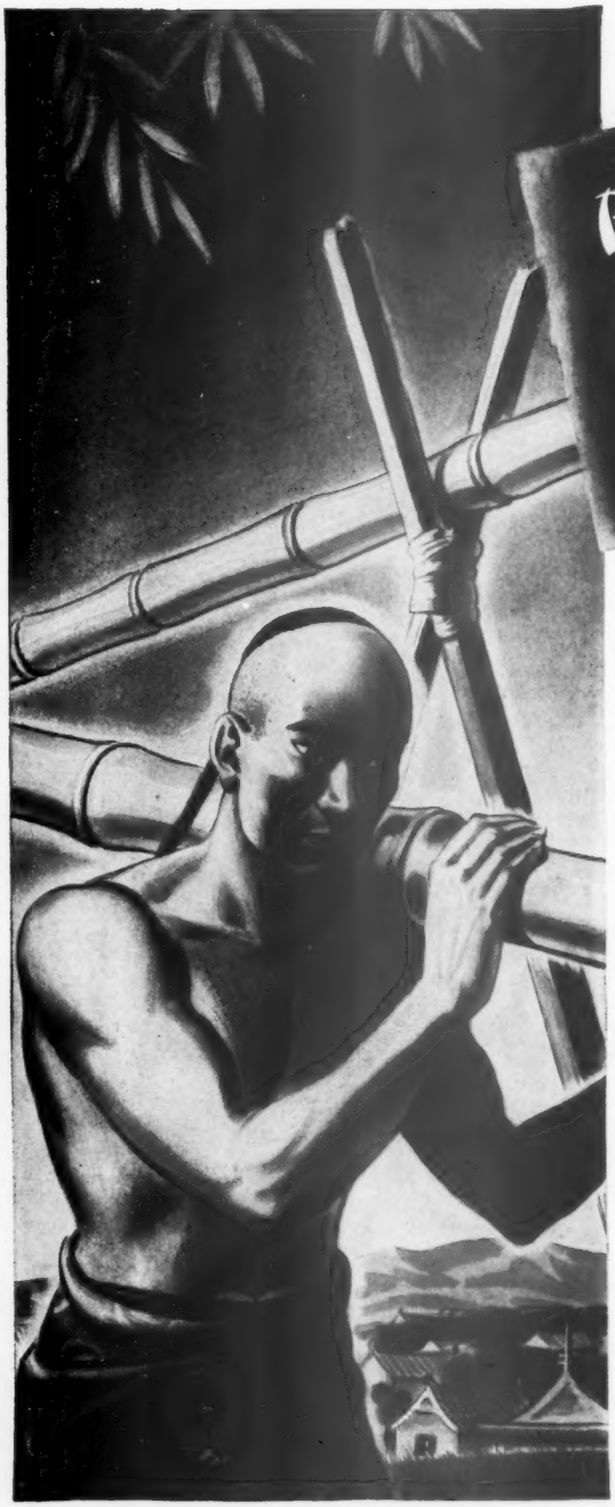


Simply punch a hole with the point of the can opener, as indicated on the sketch, and just as you do when opening a can,—and proceed. In the sketch the solid line is the portion cut and the dotted line is the uncut portion. To cut out an ellipse, circle, or any other shape with a can opener becomes a very simple matter.

McIntosh Appointed Sales Manager

John A. McIntosh, well known in the gas industry, has been appointed Sales Manager of the Vacuum Gas Appliances Division of the Union Fork and Hoe Co., according to an announcement by J. S. Nicholas, Executive Vice President. The main office of Vacuum Gas Appliances is located in Rome, N. Y.

Mr. McIntosh has had extensive experience in the gas industry, having worked as a meter reader and a serviceman in his early days. For the past fifteen years he has been associated with American Gas Products Corp. and subsequently with American Radiator and Standard Sanitary Corp. in a sales capacity in various sections of the country.



PRIMITIVE PIPE LINES OF OLD PEKIN

Age-old records show that Pekin (now Peiping) utilized Natural Gas more than 500 years before our country was discovered. Escaping from the ground nearby, it was transported through fragile bamboo pipes for evaporating salt water to produce salt and, as well, for illumination in that ancient seat of Chinese culture.

It is a far cry from this primitive practice to the modern method of distributing Natural Gas—an engineering feat never achieved by tne China of antiquity, although she deserves credit for pointing the way.

As a result of her discovery, Natural Gas is now delivered to mains through giant metal pipe lines, overland and underground, many drawing their supply from distant fields.

Used abundantly and economically for numberless residential, commercial and industrial purposes, Natural Gas has attained rightful recognition as one of the greatest contributions of convenience to our present day civilization.

COLUMBIA SYSTEM

COLUMBIA GAS & ELECTRIC

CORPORATION

Resumé of Opinions on Gas Air Conditioning

By
Gordon Rieley
Vice President
The Bryant Heater Company
Cleveland, Ohio

INTEREST in gas air conditioning abounds on every hand. Everywhere one goes in the gas industry conversation gets around sooner or later to gas air conditioning, to its splendid future and to discussion of what to do next.

The future possibilities are so big and the present sales record so small that there is great interest in some quarters regarding sales plans or outlines of what to do.

We have been collecting these outlines and thoughts on the part of the gas industry on the subject of what to do, and particularly on the subject of what to do first. Only if *something* is done can this tremendous future possibility be achieved.

The focal point in all these comments is the entering wedge. There is always difficulty in getting started, in making the first few sales or installations which can be pointed out to future prospects.

It is a certainty that any sale today can be used as a recommendation tomorrow since it is a safe bet that no gas-operated summer air conditioning equipment has been removed because of wrong application engineering.

The summary of recommendations comprises six points as follows:

1. **First of all, the promotional engineer.**
2. **Expense charged to management ratner than to the sales budget.**
3. **Salesmen's bonus earned through load building rather than through merchandising profit.**
4. **Analysis of increment cost of gas for the summer load.**
5. **Contractor and consulting engineer cooperation.**
6. **Analysis of sales possibilities.**

The above list is not as formidable, perhaps, as it may sound, and some of its points can be handled at this stage of the game in a rather simple fashion. Let's review each of these points:

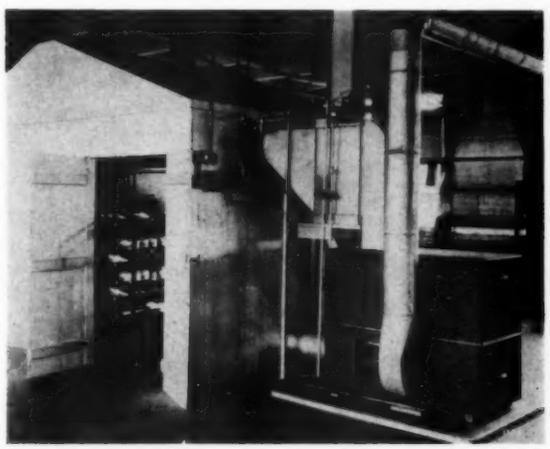
Promotional Engineer

The promotional engineer idea is evidently not new as we have been informed that the electric industry used promotional engineers to establish electrical summer air conditioning some years ago.

The promotional engineer is the man who uses the shoe leather, finds prospects and sells them, and secures the cooperation of the selected contractor organizations and educates them on the use of gas equipment. It is his business to be the salesman for gas summer air conditioning and it is his business to see that prospects are translated into customers.

Expense Charged to Management

The promotional engineer will not pay his way the first year, nor probably the second year, but should somewhere around the third or fourth year. This is an out and out expense which cannot be justified by a merchandising department held to a working budget. It is recommended that this fact secure the recognition of management and their help in the allocation of this expense. Summer air conditioning is a promotional effort that has to be started several years before profits are returned.



Bryant No. 6 gas-fired dehumidifier and dry air cooler supplying 600 c.f.m. to this dry room, at a constant temperature and humidity regardless of weather conditions, thereby reducing shoe drying time 90%, improving quality of work, and reducing last inventory. For complete description, see January 6, 1940 issue of "Hide and Leather and Shoes."

Salesmen's Bonus

The summer air conditioning industry is now controlled largely by the contractors and consulting engineers and apparently will be dominated more and more by contractors and engineers and less and less by the manufacturers of electric or gas air conditioning equipment. It is quite possible that the engineering contractor will be king and not the manufacturer nor his specially franchised distributor.

The gas industry will probably never be able to act as dealers or jobbers of the actual equipment, any more than the electric industry has been able to do. Therefore, the merchandising profit possibility does not look like a large factor and the salesmen's compensation for summer air conditioning sales must be in the form of a loadbuilding bonus.

Analysis of Increment Cost of Gas

We have heard many comments on this. We have seen some calculations as to the extra cost for gas distributed for summer air conditioning purposes. Apparently such cost is not high. The summer load is looked upon as mostly velvet and highly desirable.

Contractor and Consulting Engineer Cooperation

The comfort and industrial air conditioning business is primarily a contracting business with the contractor selling a result. The equipment is only one portion of that result and is oftentimes but a minor factor in the complete cost of the installation.

For this reason there will be one or a few summer air conditioning contractors in every large city who will

rise to dominance because they have secured good-will and recognition through the results which they deliver. At the present time these contractors are still anchored rather closely to the competitive bidding method unless they have something different and special to sell. It is this type of contractor who will appreciate the cooperation of his gas company and the possibilities of gas-operated equipment and especially of equipment for dehumidification. The promotional engineer comes first but contractor and consulting engineer cooperation is a close second and a necessary factor if the future of gas air conditioning is to be realized.

Analysis of Sales Possibilities

The sales possibilities are real but it is recognized that it is a major battle to change a present habit and introduce a new thought in an established industry.

Industries Needing Dry Air

1. Drug and pharmaceutical manufacture.
2. Refrigeration showcase glazing.
3. Electrical manufacture.
4. Leather drying.
5. Shoe drying.
6. Dental porcelain manufacture.
7. Pencil manufacturing.
8. Plastics manufacturing.
9. Rayon testing laboratories.
10. Lithographing and printing plants.
11. Storage of rugs and antiques.
12. Photo reproduction processing.
13. Biological laboratories.
14. Film drying.
15. Photo engraving plants.
16. Photo plate processing.
17. Lacquer drying rooms.
18. Safety glass manufacture.
19. Tobacco testing laboratories.
20. Cork processing.
21. Automatic Telephone Exchanges.
22. Grain and Seed drying and storage.
23. Miscellaneous drying.
24. Fish drying.
25. Candy storage and processing.
26. Match manufacture.

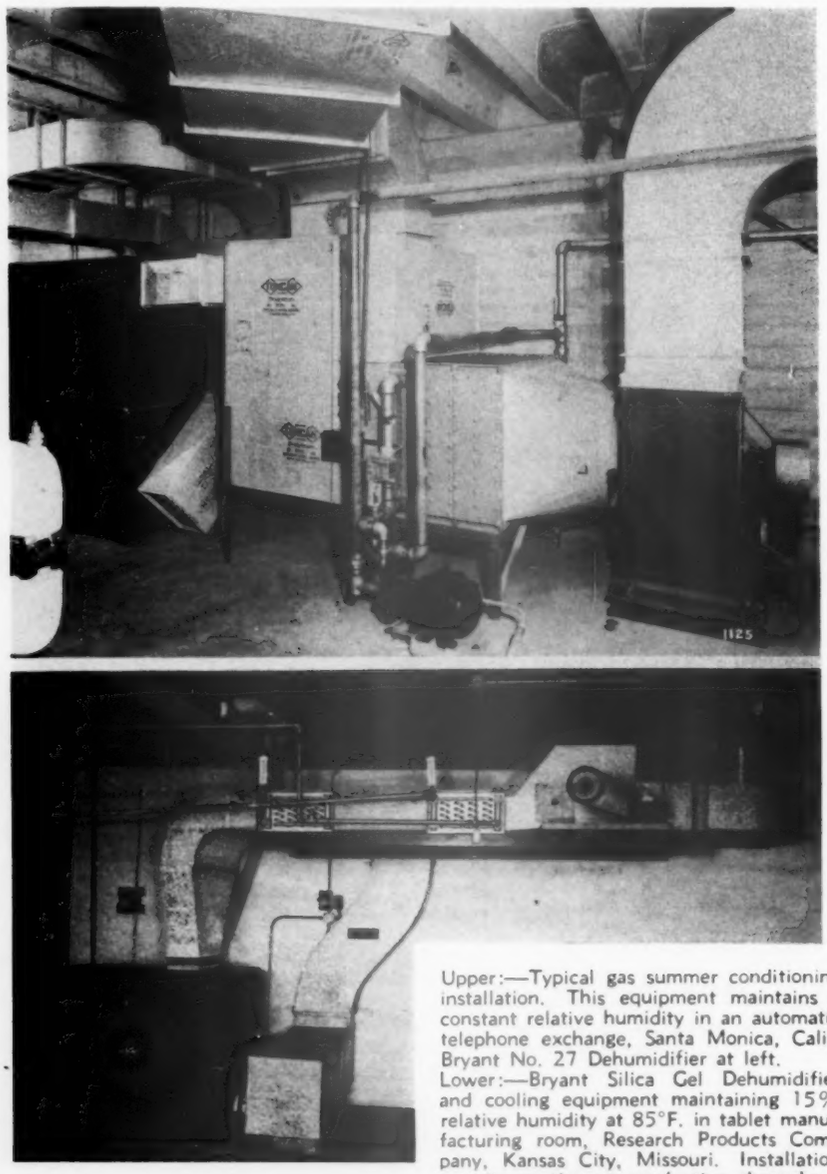
Industrial

The dehumidifier is a dry air machine and in many cases the industrial user is only interested in dry air and the temperature is of little importance.

The industrial market presents a problem in the selection of industries known to use dry air and, of course, it exists in any city in which air conditioning operation is planned.

The classifications of industries needing dry air are in above table.

There are already Bryant silica gel dehumidifier installations in companies in each of these classifications.



Upper:—Typical gas summer conditioning installation. This equipment maintains a constant relative humidity in an automatic telephone exchange, Santa Monica, Calif. Bryant No. 27 Dehumidifier at left.
Lower:—Bryant Silica Gel Dehumidifier and cooling equipment maintaining 15% relative humidity at 85°F. in tablet manufacturing room, Research Products Company, Kansas City, Missouri. Installation permits continuous production throughout the humid summer season.

Commercial

In comfort work, dry air alone is not sufficient and cooling must be used. This cooling can be tap water, well water, compressors, or gas absorption refrigerators.

Commercial possibilities are dependent on an ability to sell the owner the best in summer air conditioning and on the owner's willingness to recognize and pay for such best results.

Dry air, produced by the dehumidifier, aids in evaporation of perspiration and thereby gives a feeling of greater comfort than just low temperature. It is the ideal condition for any place where people congregate whether it is restaurants, department stores, club rooms, etc.

Those cities which can secure well water or tap water at 65° or under are ideally situated as no other cooling is necessary. Here the dehumidifier and cooling water present the ideal summer air conditioning.

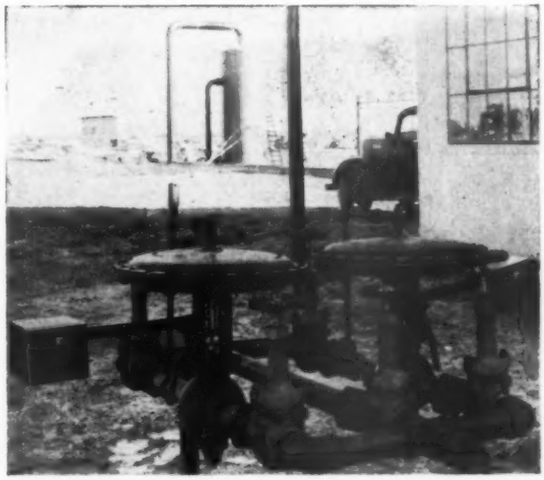
Water above this temperature cannot be used for cooling and the use of Bryant Silica Gel would require the aid of other methods of cooling.

Residential

Watch for the new homes but do not neglect the old.

In the new home, the equipment cost disappears into the general contract and its financing. The owner is definitely planning for pride and comfort, and summer air conditioning gives him both. He is definitely spending and buying and you definitely have something to sell to him.

(Concluded on page 90)



THE two C-F Low-Pressure Regulators with Automatic Cut-Off here seen, are on a gas line of a Texas refinery owned by one of the great oil-producing companies. Like all C-F low-pressure Regulators, they afford protection in case of failure of gas supply. Their merits include sturdy construction, sure precision, and long life as well as easy installation and maintenance. Write for new Catalog.

The CHAPLIN-FULTON MFG. CO.

28-40 PENN AVE. CF PITTSBURGH, PA.

64 YEARS PURIFICATION EXPERIENCE

at your Service

Super Sensitive Back Pressure VALVES

•

Unbreakable MANOMETERS

Connelly IRON SPONGE

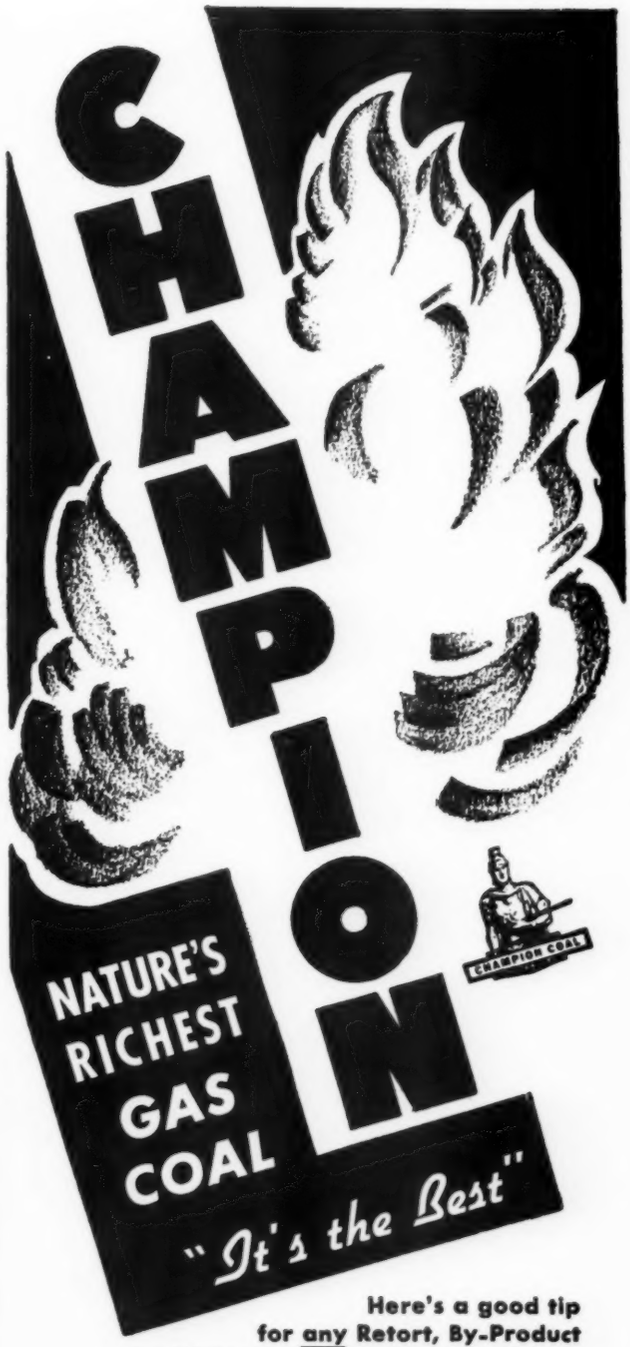
Made in U.S.A.

100% American Materials

For more than 60 years this organization has been solving purification problems for gas companies thruout the country. This broad experience, plus daily work in the field, enables our engineers to render a valuable advisory service in connection with the proper handling of purification materials.

No matter how complex—how "different"—your problem may be, it's a safe bet that Connelly engineers can solve it. Why not consult Connelly today? There's no cost or obligation.

CONNELLY IRON SPONGE & GOVERNOR CO.
CHICAGO, ILL.—ELIZABETH, N. J.



Here's a good tip for any Retort, By-Product or Water Gas plant operator. Which do you want? A higher, richer yield of gas? A maximum amount of salable coke, dense and firm in structure? Or something between the two, for production balance. Any way you want it, there's a Champion Coal just right for the job. • Begin producing on Champion—and see the difference for yourself!

PITTSBURGH COAL COMPANY
General Offices: Oliver Building, PITTSBURGH, PA.
Cleveland, Ohio Sault Ste. Marie, Mich. Buffalo, N. Y. Utica, N. Y.
New York City Philadelphia, Pa. Youngstown, Ohio
PITTSBURGH COAL CO., LTD., London, Ont.; Hamilton, Ont.; Toronto, Ont.; Windsor, Ont.
PITTSBURGH COAL CO. of Wisconsin, Duluth, Superior, Minneapolis, St. Paul
MILWAUKEE-WESTERN FUEL COMPANY, Milwaukee, Wisconsin

To Get the PIPE in the Ground . . .
Use "CLEVELANDS" and *Watch Your Costs Go Down!*

For All-round Gas Trenching—
the MODEL 95

The Famous "Baby Digger" pioneered and perfected by "Cleveland" known and used every day by Gas Companies the country over.

Answers every requirement for distribution work. An unbeatable combination of speed, maneuverability, power and ditch-capacity, in a small mobile unit. Digs 11" to 23" in width. 5½' in depth.

for { **1. Laying Pipe**
2. Filling and Compacting Trenches

The Model "80" applies machine-savings to the pipe-laying and backfilling operations. Speeds up the work, does a 100% job of trench-compacting at much lower costs. Works in limited spaces.

A machine of such genuine utility, you'll wonder how you ever got along without it.

and NOW!

A STILL SMALLER TRENCHER FOR SERVICE AND SMALL DIAMETER PIPE . . . the MODEL 75

The latest "Cleveland" achievement, the "75" weighs but 7000 pounds! Is only 45 inches wide! Digs 8 to 12 inches width, 3½ feet depth.

At last! A tiny trencher, for small trench, that has the required strength and durability.

Ask for Information TODAY on These Modern Machines

THE CLEVELAND TRENCHER COMPANY

"Pioneer of the Small Trencher"

20100 St. Clair Ave. **Cleveland, Ohio**

CLEVELANDS

Gas Equipment Development

A Description of Some of the Up-To-Date Units and Accessories for Gas Production, Distribution or Industrial Application

"Cleveland" Trenching Equipment

The Cleveland "Baby Digger," pioneer of full crawler, trenchers, was originated over 19 years ago. The Model 95 shown is the latest adaptation of that machine. With its compactness, light weight and mobility, it opened a new field for machine trenching and came into general use throughout the country among Gas Companies.

Its digging capacities range from 11 to 23 inches in width and from 0 to 5½ feet in depth.

The machine weighs less than 5 tons, and is only 57½ inches wide. This compactness accounts for its ability to work around and between the common obstructions, such as poles, trees, fences, buildings and the like, constantly encountered in city and suburban work.

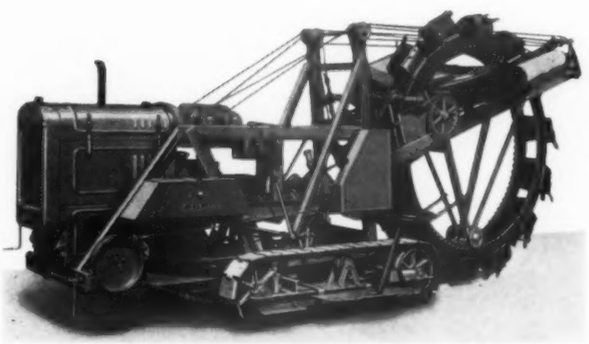
Since it carries no excess weight, this digger operates with a minimum chance of damage to tree lawns, sidewalks and drives. This compactness and light weight, together with the use of a modern, efficient Trailer, assures fast and economical transportation.

This ability to load and unload the Trencher quickly and transport it rapidly from job to job means great savings in unproductive time.

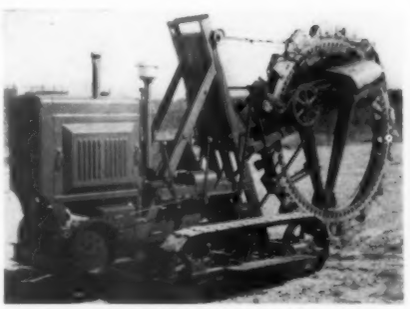
The Cleveland Model 75 Service Digger also illustrated, is the most recent addition to the Company's line of trenching equipment.

This machine was introduced to meet the demand for a small, compact Trencher capable of cutting trenches for the small high pressure mains and services.

The "75" weighs but 7,000 pounds and is only 45 inches wide. It is capable of cutting trenches 8 to 12 inches wide and up to 3½ feet deep.



Cleveland Baby Digger, Model 95



Cleveland Service Digger, Model 75

This machine has the same high quality construction and materials that are found in the other members of the Cleveland line. It, too, can be quickly loaded on its own pneumatic tired, dual wheeled Trailer and transported from location to location at fast truck speeds.

For information write Cleveland Trencher Co., Cleveland, Ohio.

New Skinner-Seal Vented Plug Clamp

M. B. Skinner Co., of South Bend, Indiana, offer a revolutionary new "Skinner-Seal Vented Plug Clamp"

Skinner-Seal Plug Clamp

for use on extremely high-pressure pipe lines. Pressure "vents" while clamp is being placed in position; then the piston plug shuts off the leak quickly and positively without chance of injury or damage.

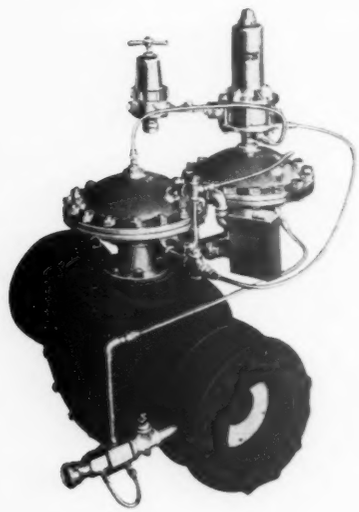
The head of the clamp consists of a malleable iron cylinder resting on a pressure-distributing base. This is anchored to the pipe by bolts and straps. The cylinder is fitted with a rubber faced metal "piston," operated by a heavy thrust screw — gasket surface 2 3/16" in diameter.

To prevent "burning" of gasket in the last stages of shutting off, the lower rim of the gasket is armored with a brass band. This also keeps rubber from escaping through vent.

Bottom of gasket is ground to fit curvature of pipe, and piston is keyed in the cylinder to prevent rotating out of position while thrust screw is being tightened.

Automatic Loading for EMCO High Pressure Balanced Valve Regulators

The Pittsburgh Equitable Meter Company of Pittsburgh, Pa., have announced the availability of a system which provides automatic loading for "Emco" high pressure balanced valve regulators controlling outlet pressures in excess of one pound.



"Emco" Loading System

In this system, the main regulator is of their standard high pressure balanced valve design, fitted with a standard pilot loading head. To provide automatic loading (or boost) an orifice plate is used, set at the outlet of the main regulator.

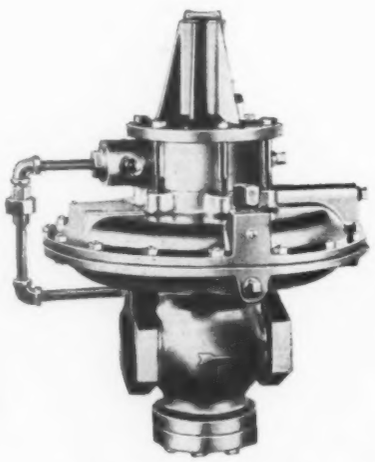
As the flow rate increases through this regulator, the pressure differential increases across this orifice plate with the square of the velocity. This differential pressure is led by means of piping to a differential diaphragm head. This diaphragm head has mounted on it a "Emco" type 39 pilot loading regulator, so connected to the differential boosting head that as the differential pressure across the head increases, the pilot loading regulator diaphragm is more heavily loaded. This has the same effect as increasing the control spring loading. Thus with increasing flow rate, the orifice differential increases, which in turn increases the loading on the differential boosting head. This results in an increased loading of the base pressure pilot regulator and, of course, raises the outlet pressure. To provide a maximum limit as a safety, i.e., a point beyond which the regulator can not boost the pressure, an "Emco" type PR pilot loading regulator is set in series ahead of this Type 39 pilot loading regulator.

The manufacturer calls particular attention to the fact that separate assemblies are used to make up the component parts in this system of loading. It is claimed that by using separate assemblies for the various parts, it is made possible to adapt the new automatic loading system to existing regulators; also to "Emco" regulators now equipped with pilot loading heads. The actual arrangement of the parts can be varied so as to provide the most accessible and convenient installation or to conform with the dimensions of any vault or regulator house.

EMCO Pressure Regulator

This regulator is designed to provide accurate control for installations having both small and large flow rates, where supply pressures ranging up to 150 pounds must be reduced to 20 pounds or less. In this category are large gas appliances, boiler plants and industrial heat treating furnaces.

It is also well suited to small town border station requirements and may also be employed for district regulator installations where systems are operated at intermediate pressures or at intermediate and low pressure combined.



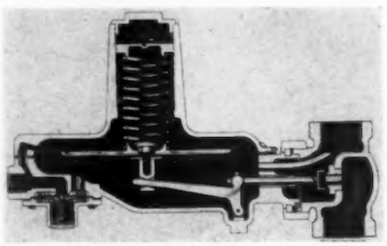
"1001" Pressure Regulator

This regulator employs a method of diaphragm loading, not previously available on medium and small size regulators. The conventional designs use a spring or weights to oppose the controlling pressure which actuates the operating diaphragm, whereas in the "1001" Regulator a pilot loading system for diaphragm control is incorporated which, it is said, assures the movement of the main operating diaphragm with the slightest change in the control pressure.

Designated as the "Emco 1001" regulator by Pittsburgh Equitable Meter Company, Pittsburgh, Pa., it is claimed to have a "thousand and one" types of application and to control pressure with a high degree of accuracy for any outlet setting of from 2 ounces up to 20 pounds, having rates of flow well in excess of the capacities normally transmitted through 2 inch piping.

Low Pressure Service Regulator

A new and improved low pressure gas service regulator is announced by the Fisher Governor Company. Outstanding feature of this new unit, is the safety relief



Fisher House Service Regulator

valve built integral with the regulator. This results in a considerable reduction in over-all dimensions and simplifies piping, particularly for indoor installations.

The built-in Relief valve of this Type 733-A house service regulator is diaphragm actuated, spring controlled and normally factory set and sealed to relieve at 1 lb. The upper diaphragm chamber is arranged to vent through the relief valve outlet.

All working parts are easily accessible without breaking pipe joints. Valve bodies are interchangeable. Interior construction provides automatic loading, assisting the regulator in maintaining a constant reduced pressure even though flow demand may be high.

Diaphragms are highly sensitive and extremely tough. They are made of a special non-porous composition impervious to gases.

Available in sizes ¾", 1" and 1¼". Suitable for initial pressure up to 150 lbs. and recommended for reduced pressure ranges of 2" to 10" of water column and 7" to 16" of water column.

Manufactured by the Fisher Governor Company, Marshalltown, Iowa.

The Retort Oil Gas Process

The Retort Oil Gas Process is a development of interest to every gas plant equipped with horizontal retort benches or horizontal gas ovens, particularly if it faces the problem of adding capacity for incremental and peak load service.

The process employs, in part, the excessive heat built up in the retort during the first few hours of carbonization, to convert gas oil into a gas that blends perfectly with coal gas.

The process offers considerable flexibility in the amount of coke obtained while meeting the gas demand.

A study of the mechanics of coking in retorts discloses that the coal charge is essentially carbonized after 2 to 3 hours, with the exception of the center core. At this stage, the outer layer of coke and the inner walls of the retort have built up temperatures sufficiently high for the cracking of oil, while the coke contains heat adequate to complete the carbonization of the center core.

The Retort Oil Gas Process consists of introducing an atomized mixture of steam and oil into the retort over the coal charge, after the top layer has attained proper reaction temperature for making oil gas. The introduction of oil and steam usually starts about 2½ hours after the retort has been charged and is continued until shortly before the end of the coking period. The duration of oil gas making would be based on load demand and the requirements for coke. When it is desired to restrict the volume of coke produced, the carbonizing time can be extended without reducing the gas making capacity of the bench below the coal gas rated capacity. Thus the plant is able to adjust coke production at all times to fit its needs.

Any existing or new retort benches can be equipped with the Retort Oil Gas Process. The installation is so designed that it is not necessary to disconnect any part of the apparatus when coal is charged and coke discharged. This applies to both stop-end and through retorts. Any regular gas oil is suitable and the process can be used in connection with any coal suitable for carbonizing.

The retort gas plant in need of greater capacity can obtain it through this process. A variety of operating schedules can be developed in benches equipped with this process to meet practically any production requirement from a normal coal gas rating to a high percentage increase over normal coal gas capacity of the bench. Flexibility in the production of coke and gas are also made available to an unusual degree. A selection of generation rating is possible which enables the greatest economic return of coal gas and oil gas production for base, peak or supplemental requirements.

The cost of oil used and the small increase in amount of fuel required represent practically the only additional operating outlay for producing oil gas by this process.

This system offers low investment cost per M C F gas produced, low production cost per M C F, together with an inexpensive and practical method for increasing bench capacity. It is simple to operate, has wide production flexibility and is available on short notice for emergency, peak and supplementary service.

The Retort Oil Gas Process is designed, manufactured and installed by Combustion Utilities Corporation, 60 Wall Street, New York.

COMBUSTION UTILITIES CORPORATION

Offers a Complete Engineering Service and Modern Equipment for the Manufactured Gas Plant to Reduce Production Costs.

COMPLETE GAS PLANTS—any size, for coal gas, oil gas and mixed gas. Designed to meet special operating needs of any production requirement.

RETORT OIL GAS PROCESS—offers instant production of supplemental oil gas in coal gas benches, up to 70%-80% increased capacity: Combustion characteristics same as coal gas: Peak loads met without maintaining "hot" standby water gas capacity: Provides complete production flexibility for coal gas plants.

IMPROVED HORIZONTAL GAS OVENS & RETORT BENCHES—equipped with Doherty Bench Fuel Economizer for efficient and economical production. Adapted for replacements and additions to existing plants.

REFRACTORY SCREEN CARBURETOR PROCESS—takes full advantage of factors favorable to low cost water gas production. Utilizes heavy fuel oils and low cost solid fuels. No smoke or other annoying production or operating difficulties. Permits of wide variation in proportion of solid fuels and oils.

REFRACTORY SCREEN OIL GAS PROCESS—an inexpensive and dependable process for production of high BTU gas for emergency or peak load service in natural gas situations. Only minor changes required to existing carburetted water gas sets. Quick start up in event of pipe line failure and for peak loads. Low operating cost. No solid fuel used. Consistent high quality gas for substitution requirements.

Over thirty years of Specialized Service to the Gas Industry, with a comprehensive knowledge of the principles and methods of gas manufacture and a sound understanding of the economic problems.

We solicit your inquiries.

Improved Equipment—Russell Engineering Division
60 Wall Street New York, N. Y.

A New Development Lessens Winter Hazards of Wet Seal Gas Holders

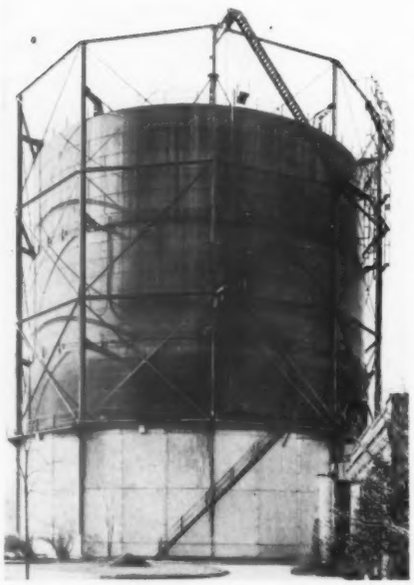
Stacey Brothers Gas Construction Company, of Cincinnati, Ohio, have developed something entirely new for the Gas Industry which is not only modern and practical, but also economical.

The new product known as Stacey Brothers Gas Holder Insulation consists of a series of large panels as shown on the accompanying illustrations, made of 24 gauge galvanized steel sheets to which is attached ½" insulating boards. An air space between the galvanized sheets and insulating board increases the efficiency of the insulation.

All panels are assembled in jigs in the Stacey Brothers' shops, which insures accuracy in all field joints and keeps to a minimum any infiltration due to air currents. An exclusive feature of the design is

Erecting the Sheeting

the method of supporting the panels which are at all times in tension. A series of adjustable bolts ride against the water tank which keep the entire assembly in a rigid position. The structure is so designed that the entire assembly or single bays can be taken down and easily stored during the summer months. Vents can also be provided at the top and bottom of the assembly which may be opened in summer for normal air circulation.



The Insulation Completed

Tests made by the University of Minnesota on this type of insulation showed a very high resistance to heat transmission. The installation will definitely serve to prevent heat losses in the early part of the fall, before the heating system on the holder is placed in operation. Peak demands during severe weather are reduced to a minimum and the chances of anchor ice forming at the bottom of the tank are very remote.

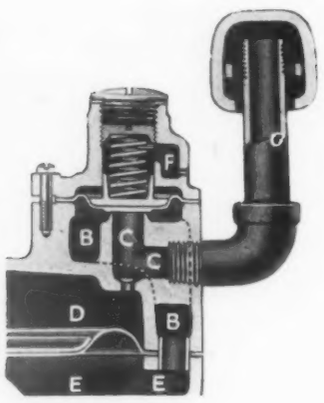
Tests made on actual installations show that the total heat savings have run as much as 60%. Lower maintenance costs on the steel tank can be had by reason of the fact that the metal is always protected by the insulation.

With small pumping equipment, lesser number of jets and with more steam available for other purposes, the manufacturer contends that the investment made on this type of insulation will actually pay for itself over a short period of time.

This new type of insulation is an exclusive product of The Stacey Brothers Gas Construction Company.

Reynolds Relief Valve

The Reynolds new diaphragm operated spring adjusted relief valve built in the top casting of the No. 1 Model 10 and Mode 30 regulators has proved to be very popular with industry. This relief valve can be set to relieve pressure from 10" water to a pound pressure and may be sealed at any definite setting when so ordered. It can be furnished with a mushroom vent



Reynolds Relief Valve

when specified which vent will prevent mud wasps from closing same.

By being a diaphragm operated relief valve, it is more sensitive than the standard plunger type relief valve and with spring adjustment makes it flexible for release of pressure under a wide range.

The high price of mercury due to present conditions makes it a very good substitute for the combination regulator which has a mercury seal as an integral part of the regulator.

The position of this relief valve on the top casting makes it readily accessible for repairs or readjustment, making it unnecessary to remove the regulator from the line.

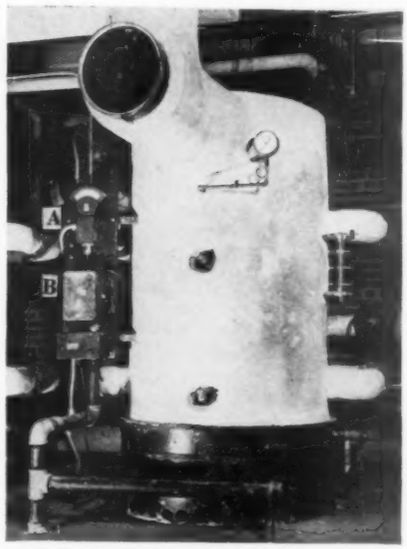
To explain the operation, normal breathing of regulator is from chamber D through port C to atmosphere. Delivery or outlet pressure of the regulator is in chambers E and B. An increase in pressure above spring setting in diaphragm operated relief valve F raises diaphragm above chamber B releasing pressure through opening C to atmosphere thereby preventing excessive pressure in house piping. Made by Reynolds Gas Regulator Co., Anderson, Ind.

Gas Service Regulators: Bulletin 703, on Low Pressure Gas Service Regulators, has been released by Fisher Governor Company of Marshalltown, Iowa. The bulletin describes and illustrates the company's Series 730 regulators including its new Type 733A regulator with Built-in Relief Valve. This regulator, with its integral relief valve feature, is extremely compact—cuts installation costs—assures extremely close regulation—has large capacities—and is neat in appearance.

Partlow Equipment in Printing Plant

The Partlow Corporation, of New Hartford, N. Y., has installed all the temperature control and safety pilot equipment required by "PM," New York newspaper.

In this plant, a solid ink is melted at 200 degrees F., or above, and is maintained at that temperature throughout all ink conduits, fountains and ink rails till it comes in contact with the colder paper, which causes it to solidify or freeze thereon. The proper temperature of



A—Model W Control
B—Saf-T-Flame Pilot

the ink is maintained by means of a closed pressure hot water circulating system utilizing three special Mears-Kane-Ofeldt gas fired boilers with Partlow controls.

By depressing a single toggle switch, the Partlow Model SD Saf-T-Flame pilot, (B) installed on each boiler, produces a 10,000 volt ignition spark and simultaneously opens a gas pilot valve, permitting gas to flow to the pilot burner. The pilot gas is ignited and as soon as the toggle switch is released and, as long as the pilot flame remains established, the relay equipment of the Saf-T-Flame unit holds open the pilot valve, and, at the same time, opens a motor operated valve in the main gas line. If, for any reason, the pilot flame becomes extinguished, or a short circuit occurs, the entire gas supply is instantaneously shut down.

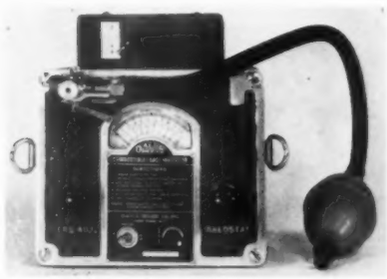
In conjunction with the Saf-T-Flame pilot, a Partlow Model 65A throttling type gas valve is used with each boiler to control the temperature of the water as it leaves the boiler. These valves automatically come into operation as soon as the respective pilot flame has been established and permit just enough gas to pass to the nine burners under each boiler to keep the temperature of the water at the required point.

As an additional safeguard and thermometer, a Partlow Model W differential type control (A) is connected directly to each boiler, with the controlling bulb of the instrument extending into the boiler, between the fire tubes, so that in case a water circulating pump fails, or the proper circulating valves are not operated, the gas supply to the main gas burners will be shut down, as soon as an increase of 20 degrees F. occurs in the boiler.

Because of the safety features provided, the completeness of the automatic controls and cleanliness of the gas fuel, practically no maintenance is required.

Davis Combustible Gas Indicator

The Davis Model 5 Indicator was designed to meet the need for an instrument which would read from 0 gas to 100% gas.



Davis Model 5 Indicator

The meter has two scales—The upper scale reads from 0 gas to the lower explosive limit.

The lower scale has two rows of figures—one above the other. The upper figures read from the lower to upper explosive limit. The lower figures from upper explosive limit to 100% gas.

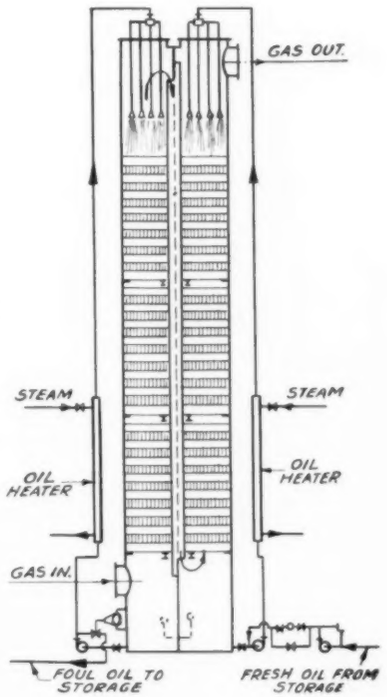
Indicator has three variable adjustments so that it can easily be calibrated for known gases. Calibration curves can also be furnished for any particular gas so that readings can be transferred to percentage of gas.

When operating below the lower explosive limit, the handle of the pet cock is in vertical position and reading is taken on the upper scale.

Full description and prices in Bulletin B21 issued by Davis Emergency Equipment Co., 55 Van Dam Street, New York.

Semet-Solvay Oil Scrubber

The Semet-Solvay Oil Scrubber used to reduce the naphthalene content and other impurities in the gas is a two pass scrubber, constructed



Semet-Solvay Oil Scrubber

with a down-pipe from the top of the first pass to the bottom of the second pass, so that the gas flows upward, counter current to the flow of the oil in each pass. There is a separate oil circulation system for each pass. The small quantity of fresh oil required is added to the oil circulation system for the second gas pass. An oil level controller regulates the discharge of the foul oil as the fresh oil is added.

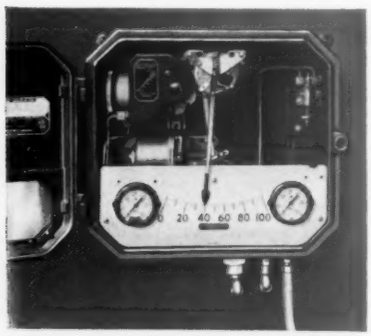
Disposal of the discharged foul oil is usually accomplished by carburetting the oil in water gas machines.

Designed and installed by Semet Solvay Engineering Co., 40 Rector Street, New York City.

Taylor Remote Pneumatic Transmission Systems

A simple, accurate and practical means of indicating, recording or controlling process variables remote from the point of measurement is offered by the new Taylor remote pneumatic transmission systems. This new system of remote transmission is particularly advantageous where it is desirable to correlate temperature, pressure, flow or liquid level data on a centralized panel or in a control room.

The system utilizes standard Taylor instruments. It may consist of one or two transmitters connected to a receiver; or one or more receiving instruments, not necessarily near each other, and as far as 1,000 feet from the transmitter. Transmitters or receivers may be indicating, recording or controlling types. Air pressure is the transmitting medium, with ¼" O. D. copper tubing as the means of connection.



Taylor Indicating Transmitter

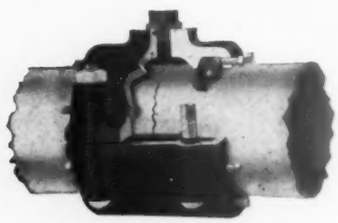
The new Taylor system overcomes the hazards of electrical transmission by doing away with electrical circuits in explosive atmospheres. It measures, transmits and receives continuously regardless of electric current failures.

For the operator out on the unit, it provides an indicating or recording instrument for observation and eliminates the necessity of returning to the main control board to check the performance of the unit.

Write to the Taylor Instrument Companies, Rochester, New York, for Bulletin No. 98156.

Dresser Distribution Appliances

Dresser Manufacturing Company of Bradford, Pa., are offering two special items of interest to Distribution engineers.

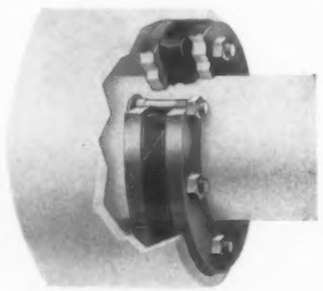


Dresser Ready-Pack Sleeve

Their "Style 80" repair sleeve is low in cost, comes completely assembled, is installed in from 5 to 10 minutes, and fits off-size pipe. It is also light in weight (permitting easy handling), and is available with taps in standard sizes up to 3", making it valuable as an economical Tapping Sleeve.

Other Dresser-type Repair Sleeves are available for repairs to circumferential breaks in the straight run of cast-iron pipe, and for the repair of split or broken bells.

Their Casing Bushing consists of two halved steel rings with a rubber-compound gasket bolted between them, this bushing can be easily assembled around pipe and slipped into ends of casing to provide a simple, quick closure. As bolts are tightened, gasket expands outwardly against inside of casing and inwardly against outside of pipe, making a tight seal against both. Casing bushings are used for any line where protective casing is used, as under a railroad track, highway, embankment; or across a swamp, canal, irrigation ditch, or stream.



Dresser Casing Bushing

The Style 83 Casing Bushing comes in four types to meet varying field conditions. Types 1 and 2 take care of all ordinary installations where there is no pressure condition between pipe and casing. Types 3 and 4 are designed for installations where such internal pressures may occur, or where line is subject to heavy ground settlement or to strong currents or undertows.

New Balanced Monobloc Pump

A new balanced Monobloc centrifugal pump, wherein the motor and pump have been engineered as an integral unit of balanced functional design in contrast to merely adapting a motor to a pump, is announced by the Worthington Pump and Machinery Corporation of Harrison, New Jersey.

This new pump, exceptionally compact, requires a minimum of floor space, yet is provided with ample room for repacking the stuffing box. A shaft of large diameter on rigid bearing mountings, maintains concentricity in all rotating parts, thereby increasing packing life. The new drip-proof motor features a directed flow of ventilating air which prevents drawing of moisture into the motor.

This new Monobloc unit is made in sizes of from 1" to 4" with capacities to 1000 g.p.m. against heads up to 280 feet. It is avail-

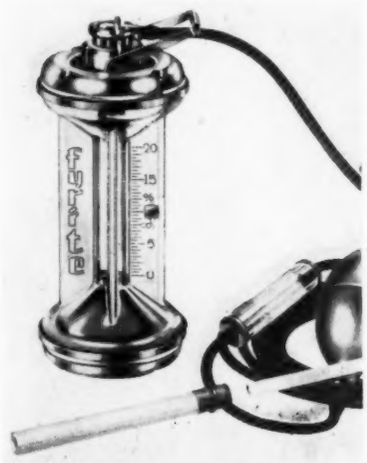
Monobloc Centrifugal Pump

able in bronze fitted, all-iron and all-bronze construction, horizontal or vertical mountings, with motor of any electrical characteristic.

Complete details, ratings and dimension tables are contained in the Worthington bulletin W-321-B14.

CO_2 Analysis Simplified

For measuring the percentage of CO_2 in the flue gases of boiler furnaces, Bacharach Industrial Instrument Company, 7000 Bennett Street, Pittsburgh, has announced a



Bacharach CO_2 Indicator

chemical type CO_2 analyzer, tradenamed "Fyrite." An important new feature is the gas sampling equipment which includes a primary flue filter with a replaceable filtering thimble. Other new features and improvements are said to make the

instrument even simpler, faster, and more fool-proof than the model for servicing domestic heating equipment which was introduced last year.

Operation is very simple. A flue gas sample of known volume is pumped to the instrument by hand with a rubber bulb and trapped in the instrument automatically by pulling off the sampling hose. The instrument is then turned upside down and back again to mix the gas sample with the absorbing reagent, which is said to be good for several hundred samplings before replacement is required. The suction created due to the complete absorption of the CO_2 pulls the absorbing fluid up an amount equal to the CO_2 absorbed. Consequently, its level shows the percentage of CO_2 in the gas. The entire operation, including pumping of the gas, is said to take less than a minute.

The instrument is a precisely formed plastic molding of water-white transparency and compact modern design. The gauge fits snugly into the hand, and its proportions are balanced so that it is not easily upset when placing it on a table, bench or ledge.

Industrial Insertion Humidistat

Julien P. Friez & Sons, Division of Bendix Aviation Corporation, Baltimore, Md., announces a new

Friez Humidity Control

Insertion Humidity Control, suitable for use where dust, dirt and other adverse service conditions would prevent the satisfactory operation of other types.

This new control features the Friez multiple human hair element, and a switch mechanism fully enclosed in a molded plastic case. Control of both humidifying and dehumidifying are provided over a range of from 10% to 100% R. H., with a sensitivity of plus or minus 1%.

Known as the Type H/61, this new instrument is suitable for use in bakers' proof-boxes, incubators, low-temperature ovens, test cabinets and similar applications.

Chaplin-Fulton Manufacturing Co. Compressor Regulator

Of interest to the user of compressor equipment is the new Fulton compressor regulator type 130 PS and the Fulton throttling regulator type 131 PS. The pilot loading principle has been applied to these

regulators, making possible precision control of compressor discharge pressures. The pilot valve has been designed as an integral part of the regulator eliminating any time lag in its response to the slightest discharge pressure variation. The type 130 PS regulator maintains a constant discharge by recycling any excess pressure through the compressor. The type 131 PS performs the same function by throttling the intake. Rigid control of medium and high discharge pressures especially insures efficient compressor performance.

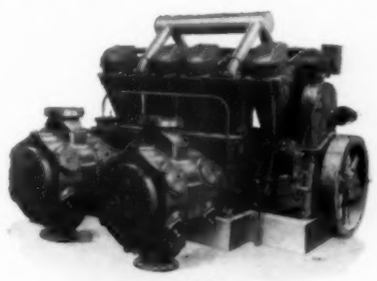
Differential Gas-Air Regulator

The Fulton duplex differential gas-air regulator is experiencing increased usage in industrial heating installations. This regulator will reduce any initial pressure up to 50 pounds per square inch to any reduced pressure from inches of water to 3 pounds and at the same time maintain between the gas and air pressures to the burners a con-

stant differential from 0 to 8 ounces. In industrial furnaces when the thermostatic control increases the air pressure, this regulator increases the gas pressure maintaining the desired differential between the air and gas supply. It also is used in installations where existing oil-fired burners are being converted to gas-fired. The Differential Gas-Air Regulator is installed along with a proportioning valve to provide that the gas and air to the burners are delivered at the same pressures, or in other words O differential. At the same time the connecting linkage increases the operating power of the diaphragm and provides very sensitive regulation at inches pressure.

Gas-Engine Compressor

Ingersoll-Rand announces a new heavy-duty, gas-powered compressor known as the "LVG." This four-cycle unit is built in 485 and 650



Ingersoll-Rand Compressor

hp sizes using 6 or 8 V-type power cylinders. By using only two compressor frames on either size, the inlet, discharge and inter-stage piping and manifolding are simplified,

and only two stuffing boxes are required.

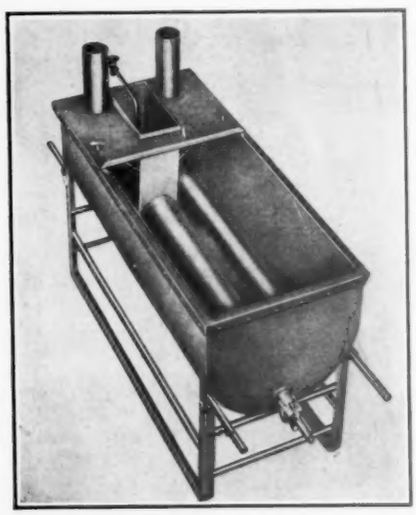
It incorporates overhead valves and removable wet-type liners in the power cylinders. All auxiliaries, including the camshaft, the built-in recirculating water pump and auxiliary power take-off are driven from the flywheel end of the shaft, a feature promoting good governing and smooth operation. Lubrication is full force-feed, with continuous oil cooling and oil filtration. Power pistons have oil-cooled crowns. Governing provides for manual or automatic speed control down to half-speed.

Made with suitable cylinders for pressures up to 5000 pounds and for vacuum service. The V-type cylinder power end of these units is available as a straight gas engine, known as the PLVG.

Described in bulletin 3073 issued by Ingersoll-Rand Company, 11 Broadway, New York.

Immersion Heater for Bituminous Products Uses Bottled Gas

The Aeroil Burner Company of West New York, N. J., has adapted their patented Aeroil "Heet-Master" Kettle to the use of liquefied petroleum gas. These gas burning kettles for bituminous products of all types are being used successfully in many parts of the country.



Immersion Gas Heater

This kettle is operated on the principle of an internal tube heating system. The liquefied petroleum burner is actually inside of the kettle itself, down in a well where it is protected against wind, rain, and adverse weather conditions.

The flame is thus placed directly into the tubes effecting a rapid and uniform transmission of heat.

It is claimed this kettle will heat or melt twice as fast as the conventional fired from the bottom kettle. The "Heet-Master" is thoroughly insulated and the heating tubes are removable for cleaning by simply spinning two thumb screws.

Bulletin 198J on Aeroil kettles equipped with liquefied petroleum burners will be sent on request.

Hausfeld Metal Melting Furnace

The Hausfeld Gas-Fired Multiple Burner furnace for non-ferrous metals is of the tilting crucible type. It is a four burner unit, the distributing head being designed to carry an equal amount of fuel to each of the burners.

These burners fire tangently around the combustion chamber between crucible and furnace lining. The resulting even distribution of heat prevents cutting action of the flames which increases the life of crucible and lining. It also results in faster melting time and reduced metal losses and fuel consumption.

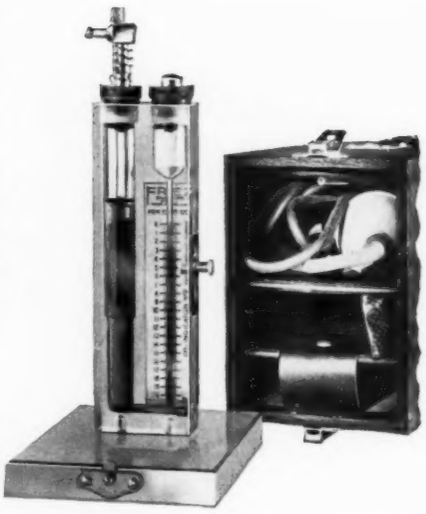
Operated with the manufacturer's own low pressure blower and mixing tee or a complete inspirator set and the customer's own air supply.

Made by The Campbell - Hausfeld Co., Harrison, Ohio.

New CO_2 Indicator

Julien P. Friez & Sons, Division of Bendix Corporation, Baltimore, Maryland, announces a new Carbon Dioxide Indicator.

The new instrument is machined from a solid block of crystal-clear plastic, while the metal parts are of stainless steel. The absorbent solution is a brilliant red in color, and its level is clearly reflected from the polished scale allowing the operator to line up the liquid level, its reflection and the scale graduations, thus preventing any possibility of parallax error. Only three simple steps are involved in using the Indicator, which is accurate to within ½% CO_2.



The Indicator is supplied complete with a carrying case, in which space is also provided for a Stack Thermometer and a full-size Draft Gauge, both of which may be purchased separately from this manufacturer.

Full description with prices in Circular Y.

Meter for Liquefied Petroleum Gases

A new meter, especially developed for the measurement of liquefied petroleum gases, has been announced by the Pittsburgh Equitable Meter Company. This meter has a cast iron outer case which

Meter for Liquefied Gases

the manufacturer states is necessary in order to assure complete safety in the measurement of these highly volatile vapors.

There are only two relatively short sealing surfaces in this design. It is claimed that by the use of surface grinding, a specially developed gasket and a generous number of large diameter screws, complete and permanent sealing is provided.

Of particular interest is the unit construction of the index housing within the meter cover. A new development in solderable, thick, high strength glass provides a complete seal and eliminates the necessity of having a stuffing box to seal the index shaft.

Other innovations include a thoroughly lubricated and rigidly supported drive shaft mounted with its drive gear in an integrally designed movement box. This construction also provides a lubricated seal which prevents the escape of gas should the index glass be accidentally broken.

Optional diaphragms and diaphragm treatments are said to be available. Either a special material; particularly resistant to the action of the liquid hydrocarbons, or sheepskin, with treatments adapted to resist this action, can be furnished.

Indexes reading in therms, decitherms, gallons, pounds or equivalent cubic feet are available for specification by the purchaser. Special connections to fit the needs of the liquefied Petroleum Gas Industry are provided optionally at the side or top of the cover.

The Pittsburgh Equitable Meter Company have issued a bulletin describing this meter in detail. Copies can be obtained from the manufacturer at 400 N. Lexington Avenue, Pittsburgh, Penna.

Sprague No. 4 Cast Iron Meter

Designed especially for house heating loads and small industrial installations, the Number 4 Sprague Meter is compact, rugged and accurate, following to a large extent the general construction of other Sprague types.

Simple in design and mechanism, with ample sized condensation chambers, semi-chrome, one piece fully processed diaphragm, it is available for manufactured or natural gas.

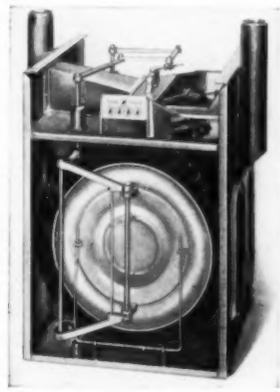
Sprague No. 4 Gas Meter

Both crank and speed adjustments may be made from the outside. The operating mechanism has but one stuffing box. Worm and gear are well protected and it is provided with annealed glass valve and self-cleaning valve seat.

Full description with dimensions, capacities and details of parts will be found in Bulletin 22 issued by Sprague Meter Company, Bridgeport, Conn., and available through any of their branches.

Superior "C" Meters

Shown in the adjoining cut is the Superior 11 "C" 1100 cu. ft. per hr. meter. This is one of five "C" meter models, ranging in size from 600 to 7500 cu. ft. per hr. Special features of this type include: A high ratio of capacity to space occupied;



Superior Type C Meter

Simplicity of action with a minimum of moving parts; New flag and valve design for quiet operation; and, heavier, reinforced construction throughout.

These new "C" meters are intended for industrial and house-heating use, where, due to space limitations, small high-capacity meters are desirable, and where the fluctuating nature of the load imposes a severe strain on the meter.

INDUSTRIAL GAS BOILERS
GARMENT PRESS BOILERS
100 lbs. ASME Code
¾ to 45 H.P.

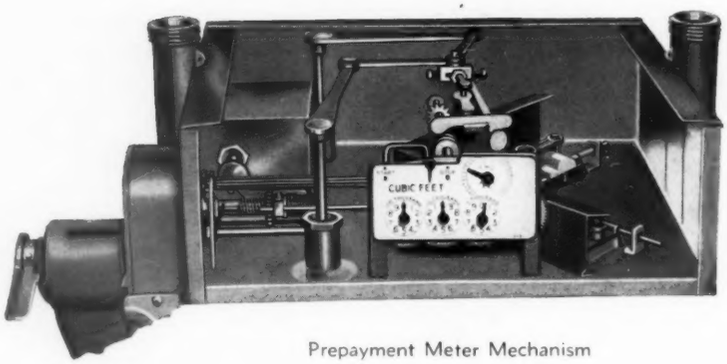
P. M. LATTNER MFG. CO.
MAIN OFFICE
CEDAR RAPIDS, IOWA

"American" Prepayment Meters

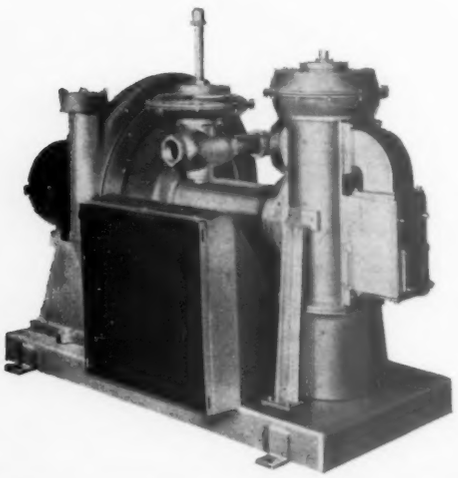
There are a number of new features in the late models of prepayment meters offered by American Meter Co.

These have been completely redesigned with relation to prepayment mechanism. Numerous types of indexes are available.

Catalog P.G.4 issued recently by the Company, describes in picture and tabular form the exterior and interior parts. It discusses the functions of such meters and defines their fields of application and methods of use. Copy available through any American Meter Company office.



Prepayment Meter Mechanism



McKee "Automix" Air/Gas Premixing Unit

On certain industrial gas applications it is desirable and advantageous to use a central air/gas premixing system instead of unit mixers at each burner or unit appliance. To this purpose is the McKee "Automix" air/gas premix unit designed.

Low pressure gas and filtered air are mixed in definite ratio and delivered under pressure. But a single mixture line or manifold is required, rather than individual air and gas lines and a full mixture is carried right to the burners without need of further mixing or of secondary air supply.

Air/gas ratios are held with precision accuracy and uniformly from a single pilot flame to full capacity. Turndown ranges of 25-to-1 and more are not uncommon.

It is used with all commercial gases from manufactured gas to propane and butane. The included ratio adjustment feature gives adequate range to take care of changes in flame requirements and will even permit changing from one kind of gas to another without change of mixing equipment. Made by Eclipse Fuel Engineering Co., Rockford, Ill.

BESSE, OSBORN & ODELL INC. · COLONIAL BRAND · BOSTON, U.S.A. · RE-CHROME METER LEATHER

PIONEERS

in the manufacture of

RE-CHROME METER LEATHER

For the Gas Industry

"COLONIAL BRAND"

OUR LEATHERS will stand up in the meter under all variable conditions. Unaffected by heat, cold or dampness. The test of time has proven their superiority over any substitutes proposed or offered for diaphragm use; they are strong and pliable.

We also manufacture Oiled Meter Leather as well as Re-Chrome for Iron and Tin Meters, Governors and Regulators.

BESSE, OSBORN & ODELL, INC.

65 South St., Boston, Mass.

Sales Representatives

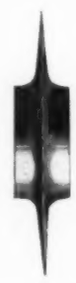
Bankart & Samuelson, 177 William St., New York

Wilder & Co., 1038 Crosby Street, Chicago

New Reed Pipe Cutter Wheel

The Reed Manufacturing Company of Erie, Pennsylvania has developed a new cutter wheel which has been made not only for Reed pipe cutters, but, at the demand of the user, it has been made in sizes to fit almost all cutters made by other manufacturers.

Reed
Razor Blade
Cutter Wheel



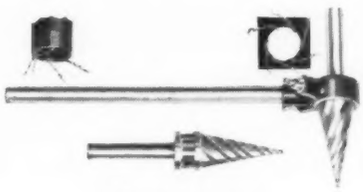
These new Reed "Razor Blade" cutter wheels are made of a special chrome nickel alloy. They have an exceptionally thin cutting edge strongly reinforced at the hub, designed in such a way that they cut off pipe with remarkable ease and leave but little burr. Yet, they have greatly reduced breakage of wheels.

The toughness and ease of cutting recommend them for use as replacements for all cutters.

Reed Mfg. Co. Appliances

Rachet Reamer

The spiral flutes feed the pipe into the burr without pushing. It cuts instead of scrapes the burr out,



Reed Reamer

leaving the completed cut smooth and clean. The cone is forged tool steel and stands long use on pipe burrs.

Long Jaw Clamp Vise

These pipe vises have a positive grip. Long bearing jaws distribute the pressure so that the tendency to mar or bend the pipe is eliminated. The lower jaws are re-

Reed Long Jaw Clamp Vise

versible when wear makes it necessary. The design of clamp and base is such as to permit its use on squares or pipe up to 4 inches.

Series 60 Crane Basmor Boiler

Bastian-Morley Co., Inc., LaPorte, Indiana, has recently announced a new heavy duty gas fired boiler with a scientifically engineered, integral header. This is known as Series 60 Crane Basmor Boiler, having an exclusive design of boiler sections.

These sections are so cast that when assembled into a complete unit they form a proper drop header and Hartford return loop as an integral part of the boiler. No matter how many sections are used, from 6 to 31, the system of passages, baffles and drips formed by joining the sections, together automatically builds up the perfect header for each combination. Moreover, since the header is an integral part of the sections, the steam

Basmor Series 60 Boiler Sections

is subjected to the heat of the flueway, providing a super-heater feature. Being built-in, the header is protected against heat loss by the boiler's insulation.

The Series 60 has been designed for big installations, steam or hot water. Input ratings range from 800,000 B.t.u. to 4,800,000 B.t.u.

It employs the Basmor patented "Staggered Heat Travel" fins which extract a maximum of heat from the fuel burned. A distinctive feature is the gas actuated "safe side" control system.

Distributed nationally by Crane Co., through its branches and Crane wholesalers.

GOODMAN
USED SINCE 1897
"Z" HANDLE & LOCKING SLEEVE
GAS MAIN STOPPER

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it **holds.** Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

The Reliable Shut-Off for Street Mains

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

REED'S 4 WHEEL Razor Blade Pipe Cutters

IDEAL FOR ANY TRENCH OR OTHER CLOSE QUARTER JOBS

$4.20 F. O. B. ERIE

Capacity
½" to 2"
Weight 5 lbs.

The REED FOUR WHEEL Cutter operates with a short back and forth motion through only one third of a circle. Each of the four wheels exerts the same pressure on the pipe, and all 4 therefore cut evenly and completely through the pipe at the same time.

Equipped with Reed special alloy RAZOR BLADE Wheels, which cut with remarkable ease, leave little burr, and have a long life of useful service.

A sample cutter for test and trial may be ordered on memorandum invoice, to be paid for if retained or returned for credit if unsatisfactory. Try it once, and you will use no other.

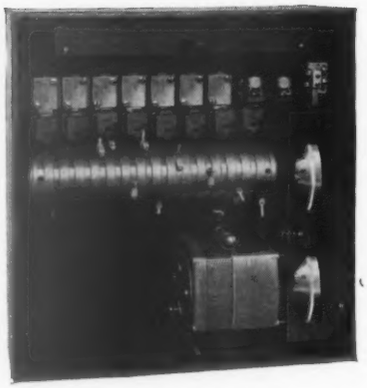
REED MFG. COMPANY
1436 W. 8th Street • ERIE, PA.

New Taylor Flex-O-Timer

Precise timing of the sequence and duration of operations involving temperature, pressure, humidity or combinations of each often means success or failure for many industrial processes.

Adaptable for all-electric, all-pneumatic operations, or combinations of both, the new Taylor Flex-O-Timer, introduced by the Taylor Instrument Companies, Rochester, New York, permits maximum precision of timing with minimum labor and expense.

Extreme flexibility is obtained by the use of adjustable pins on the revolving drum. Cam cutting is eliminated and the actuating pins are easily and precisely adjusted in circumferential undercut grooves on the one-piece drum and locked in place with a screw. The air valve or switch can be turned on and off or vice versa, within ½ of 1% of total cycle time by means of this extreme adjustability. A new latch-trip solenoid operated mechanism starts the process instantaneously.



Taylor Flex-O-Timer

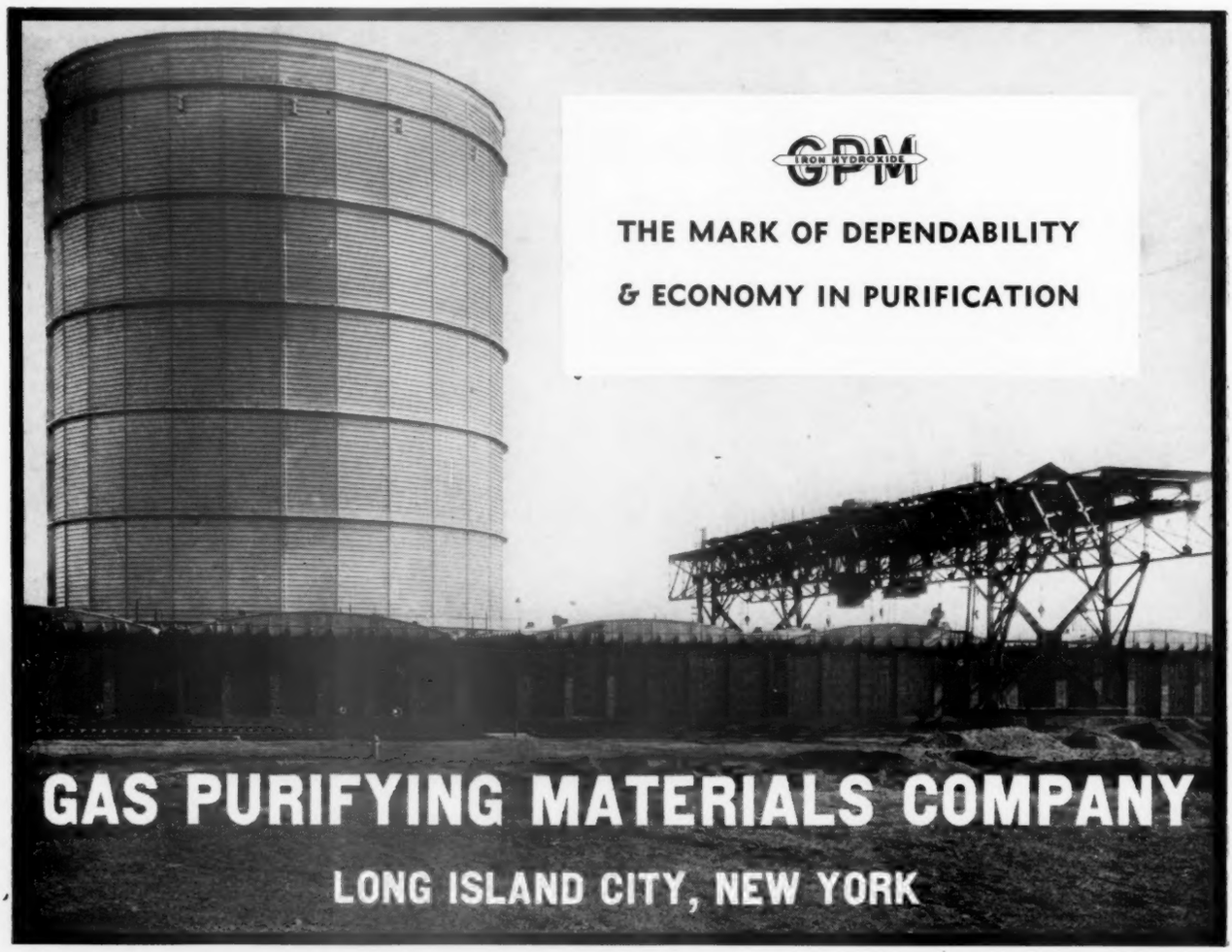
Where the diversity of the products being processed requires considerable variation in processing time, Taylor Flex-O-Timer offers a varying drum speed rotation. The drum is directly run by a spur gear train, but a unique dog-and-latch mechanism provides 78 different drum speeds with each gear train ratio. Yet the drum speed is fixed and positive for any given setting and can vary only as the frequency of the electrical supply changes.

Industrial Temperature Control

Standard Controls, 381 Fourth Ave., New York, in a bulletin recently issued, describes their "Thermoletts" temperature controls. It is stated that as most industrial processes are carried out at a definite temperature, calibrating the temperature sensitive bulb for the desired temperature is done at the factory.

"Thermoletts" consist of a bimetallic loop hermetically sealed in glass or metal envelopes. They are 2½ inches long and ¾ths of an inch in diameter and can be easily inserted into a thermometer well or a metal cage. They are connected to the Thermolettor (an electronic relay) by two wires.

Connections between the thermolett and the thermolettor are made by ordinary electric wiring and of any length, without affecting the accuracy of the control.



• Meet the G.P.M. Specialists at the AGA Convention, Hotel Ambassador

Gas Appliance Progress

Describing Some of the Modern Appliances and Accessories for Domestic and Commercial Use

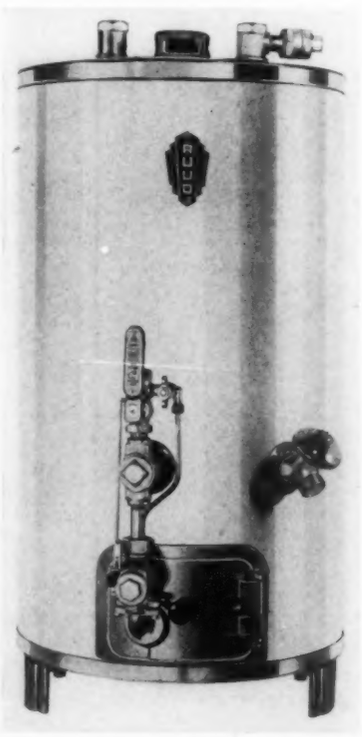
Ruud Gas Water Heaters

To meet the rapidly expanding small-home, small-family market, the Ruud Manufacturing Company, Pittsburgh, Pa., has announced a new Four Hundred Series consisting of three fully-automatic, Monel-tanked, gas-fired water heaters.

Nos. 440 (40 gallons a day) and 460 (60 gallons a day) are particularly applicable to the residential field while the No. 425 (25 gallons a day) finds a responsive market among small commercial users.

These units are identical in features of construction with the Ruud-Monel Twelve Hundred Series. The large capacity for these small water heaters is due to the maintenance of a higher storage water temperature which is mixed at the faucet for use.

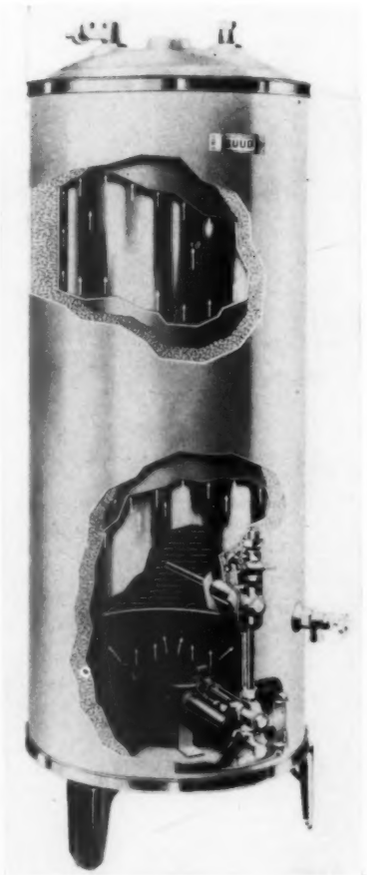
The heating action is fully automatic, having dual control with the positive snap-action thermostat and the automatic cut-off, both being proven safety features.



Ruud No. 440 Water Heater

Outer flue construction provides a maximum of head absorption area, utilizing the sides and bottom of the Monel tank. Heavy rock-wool insulation provides for economy of operation.

The outer jacket is finished in lustrous white porcelite. Full front rigging provides accessibility and installation in limited space.



Ruud 1200 Series Water Heater

The Ruud Twelve Hundred Series

Since their introduction three years ago, the Ruud-Monel Gas Water Heater (Twelve Hundred Series) continues the unique feature of the rust-proof and corrosion-proof Monel tank which is backed by a written 20 year guarantee against failure due to these common causes.

High heating efficiency is made possible by outer flue construction permitting the maximum of heat absorption area on the sides and bottom of the tank. The bunsen-type burner and positive snap-action thermostat combines in a fool-proof assembly to give an ever-ready, fully-automatic hot water supply. Gas flow to the burner is further controlled by the automatic gas cut-off which closes both the main and pilot gas valves in case of pilot flame failure.

Heating efficiency is further increased by the extra thick blanket of premium rock-wool insulation.

Outer jacket is of heavy, special finished steel, finished in a lustrous porcelite finish. Chromium trim and aluminized fittings add to the beauty of the appliance.

Four popular sizes of these water heaters are available in 20, 35, 45 and 60 gallon capacities, to meet every domestic application and many industrial and commercial needs.

Pittsburg Combination Forced Warm Air and Water Heater System

Production of a new gas-fired unit that will serve as a combination forced circulating warm air and domestic water heater is announced by The Pittsburg Water Heater Corporation, Pittsburgh, Pa.

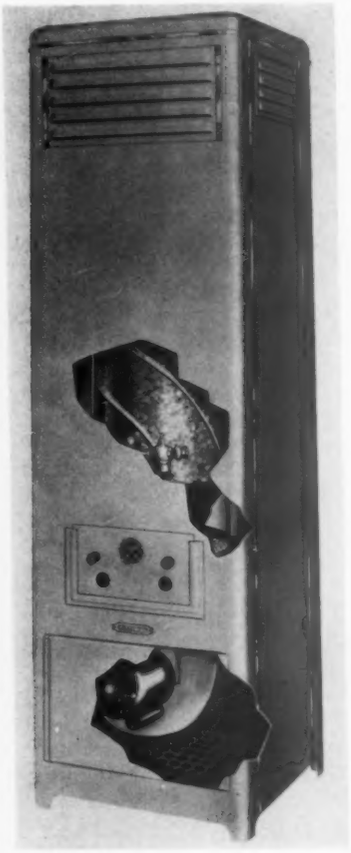
The new unit captures part of the heat given off from the hot water tank, forcing it into circulation by an electric blower.

The unit is especially adaptable to small homes, store rooms, beauty parlors, warehouses, assembly halls and other places where both air heating and hot water are desired.

These heaters are built in two models, one to throw the heated air directly into the room through louvers at the top of the enameled cabinet, the other equipped with ducts for hot air pipes for directed

heating. May be installed in any room or in the basement.

The hot water storage tank, located in the center of the unit, is heated by a burner equipped with automatic temperature and safety controls. The burner unit, flue, and tank are entirely encased in a steel shell, the warm air circulating area being between the finned flue and the enameled outer shell.



Combination Water and Air Heater

The electric motor-driven blower is located directly below the gas burner, which is in a sealed compartment attached to the flue. The blower forces the air up past the steel liner, and over fins, thus utilizing the heat given off on its way up the flue.

The air is further heated before passing out of the louvers or ducts by passing through scientifically baffled finned heating coils through which hot water from the tank is circulated.

Air Conditioning Unit

A complete line of new Custom-Aire winter air conditioning units has been announced by H. R. Kramer, president of Heating Equipment Co., 1123 Harrison Street, San Francisco.

There are two new types, the UB and RB series, each type made in five sizes. The Btu input per

"Custom-Aire" Unit

hour in each series ranges from 70,000 to 200,000, as rated by The American Gas Association.

The UB series, which is designed to conserve floor space and to fit in corners and closets, has its controls completely concealed within the false front of the unit. The filter compartment and return air connection can be installed on the right or left side, or the return air supply can be brought directly through the floor beneath the furnace. All parts are accessible from the front of the unit.

In the RB model the blower and filters are placed to the right of the heating unit. This model requires little headroom, enabling the unit to fit beneath stairways or in shallow basements.

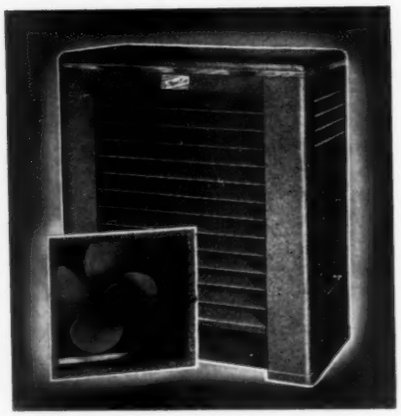
Custom-Aire burners are set at the factory and require no further adjustment. They consist of multi-tubular burners made up of many individual bunsen-type burners. Each heating section has a battery of three of these burners, plus a connecting burner of the same type. A specially designed burner tube is provided for the particular type of gas to be used.

Complete descriptions of these new Custom-Aire furnaces are given in an eight-page illustrated bulletin recently issued by the manufacturer. Copies may be had by writing to Heating Equipment Co.

Fan-Forced Circulator

Fan-forced circulation of heated, filtered and humidified air with downward discharge is accomplished by the "Brilliant Fire" unit made by Ohio Foundry & Manufacturing Company of Steubenville, Ohio.

Safety pilot, automatic control and down draft diverter are features which make for satisfactory heating results. Housed in a cabinet of heavy gauge steel, this fully enclosed unit is provided with side louvers to provide egress for directional heat flow. A pilot keeps the burner primed for quick response from the thermostat.

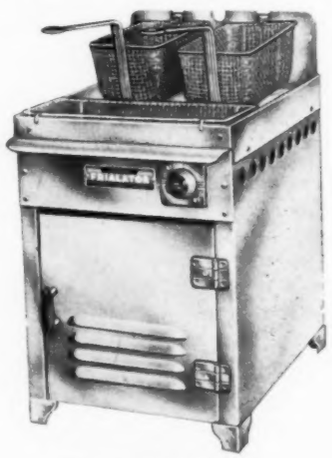


Downward Discharge Heating Unit

The heating principle is that of convection, the products of combustion being confined within a sealed radiator so that room atmosphere is not contaminated by burned gases. Made in three sizes with 30,000, 45,000 and 65,000 Btu. input. Finish is rust brown, olive green or burled walnut, all with chrome trim. Full description in bulletin O-405.

Two Models of "Frialator"

The #10-C Pitco Frialator has proven very popular for installation in dining cars, as well as restaurants and hotels. This unit is



No. 10C Frialator

often used as an auxillary to take care of off peak loads. Thus, the larger units may remain idle during the slower periods, creating savings in both gas and fat. This

chrome or stainless steel unit may be installed in full view of the public, as it adds to the attractiveness of any counter.

The #14 square, twin baskets Pitco Frialator permits the user to fry two different foods simultaneously, for example, fish and potatoes. This is very convenient in preparing orders. The Pitco Frialator sanitary process always produces the finest in delicious, crisp, golden-brown foods, retaining all of their natural sealed-in flavors. Burned sediment and black carbon specks are avoided in a Frialator nor is the taste of one food imparted to another.

No. 14 Twin Basket Frialator

Made by J. C. Pitman & Sons, Inc., Lynn, Mass.

Burkay Gas Water Heater

Designed to perform four individual functions, the Burkay Volume-Flow Water Heater has a finned heating element of tinned copper to provide immediate heat transfer and a bronze thermostatic safety control unit which is set to regulate the amount of gas admitted.

Made in two models, 40" high by 24" diameter, the standard installation will supply a constant or intermittent demand for hot water at uniform temperature.

The Booster Installation will, without alteration or change, raise pre-heated water to higher, sterilizing temperatures.

Burkay Water Heater

The Recovery System employs accelerated, pump circulation to assure rapid replacement of the hot water drawn from the storage tank and more uniform storage temperature.

The Booster-Recovery System supplies hot water at two temperatures—at sterilizing temperature for dish rinsing or other specialized requirements and also at more moderate temperatures for general use. Has A. G. A. approval.

Made by The Burkay Company, 2003 Ohio Bldg., Toledo, Ohio.

Snap Action Low Water Gas Cut-off

This mechanical type safety control for boilers will automatically shut off the gas flow to the burners when a low water level endangers the boiler.

Mechanical Safety Control

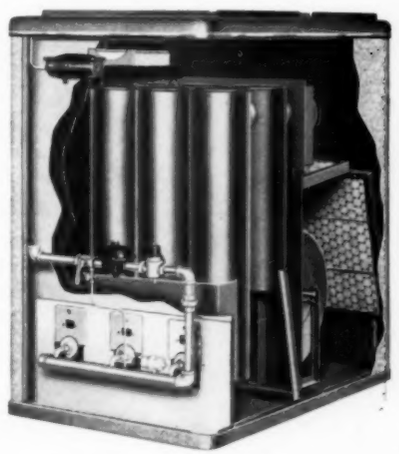
The float in the chamber rides up and down with the water level in the boiler and on reaching a designated low point operates a cam which releases the shut-off mechanism. Once it has shut off the gas it must be reset by hand before gas will again flow to the burners.

This control, made by the P. M. Lattner Mfg. Company, Cedar Rapids, Iowa, is adaptable to any gas fired boiler. There are nine models for gas line sizes up to four inch.

Gas Fired Air Conditioner

The newest product to be offered by The C. A. Olsen Manufacturing Company, Elyria, Ohio, is a gas fired air conditioning unit. It is made in three sizes with inputs of 110,000, 165,000 and 220,000 Btu per hour.

The heating element is steel, welded, and consists of round combustion chambers, round radiators, plus an economizer. It is claimed by the manufacturer that this design assures high efficiency and noiseless operation.



"Luxaire" Gas-Fired Air Conditioner

A distinctive feature is the Luxaire "Multi-Port" burner, which is equally suitable for either natural or manufactured gas. In this burner, chrome steel grids replace the conventional ports. Because of this design it is claimed that the gas ignites and is shut off silently.

The cabinet, enclosing the working parts, is rigid and pleasing in appearance. The finish is two-toned green hammerloid enamel embellished with a chromium-plated moulding strip. Standard equipment includes all necessary controls and an evaporative type of humidifier.

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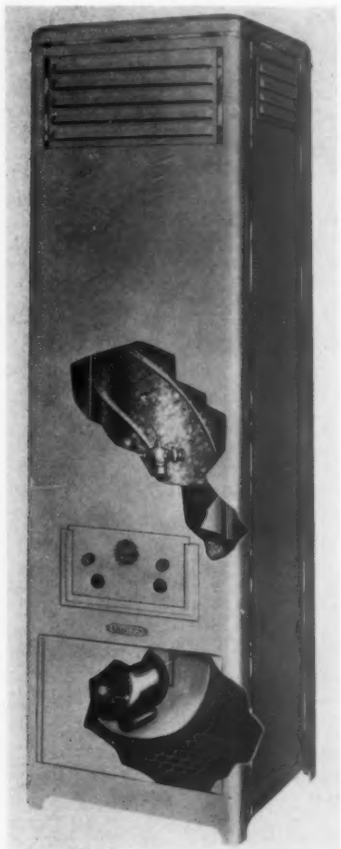

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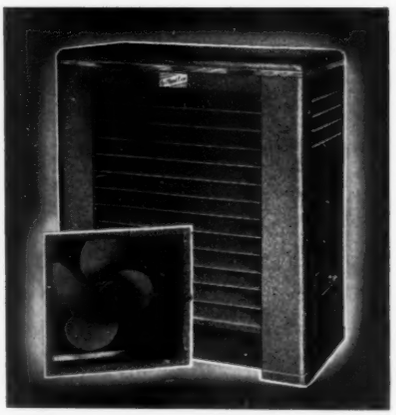

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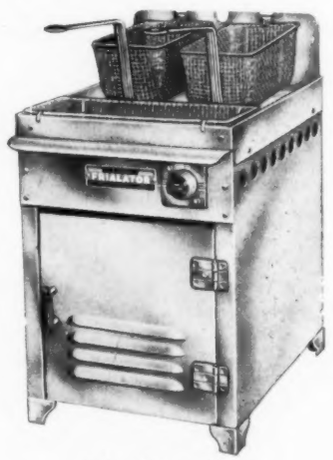

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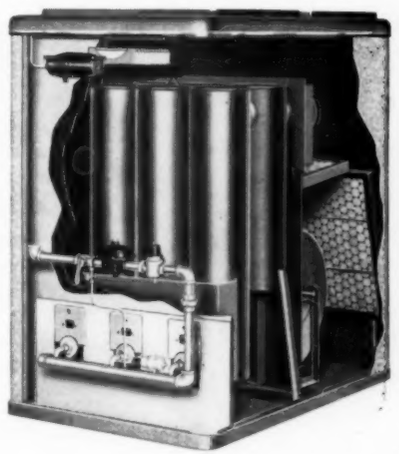

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New Model Warming Table

A food warming table that operates on a new principle makes its appearance in the equipment

"Thermaduke" Warming Table

field under the name "Thurmaduke." Made by Duke Manufacturing Company, 2217 North Broadway, St. Louis, Mo.

Distribution of heat is obtained by sectional radiation plates instead of the water jacket now found in steam tables. Thus food is heated directly, much more quickly, and sections may be used as needed.

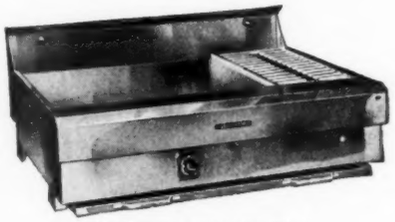
Sectional control, besides saving gas, allows the maintenance of the correct temperature for individual foods. Soups and meats can be held at high temperatures, fish and vegetables at medium temperatures, and mashed potatoes at low temperatures.

Additional features of the new table include: an insulated body of baked enamel in a neutral light color; die-stamped, stainless steel top plates that are precision fit and interchangeable; parts and extras completely standardized, thus reducing cost of both; selected close-grained carving board of Michigan maple; and bell-shaped adjustable feet to obtain levelness on uneven floors.

Anetsberger Restaurant Units

The combination "Grillator" and Hot Plate shown here has grill tops of cadmium plated cast iron with button type pilot lighters, precision thermostatic control and chrome plated steel cabinet with removable drip tray in the back and crumb tray beneath. Standard model S-24-2H is 33½" wide and 24" deep with gas rating of 7000 each for the griddle burners and 9000 each for the hot plate burners.

The filter fryer shown has twin adjustable baskets which can be

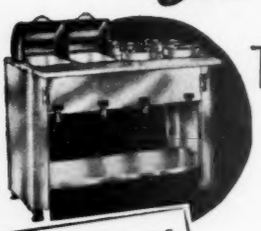


"Grillator" and Hot Plate

set at any depth desired. High precision electric thermostat has "electric eye" that indicates when desired temperature is reached.

Filter Fryer has Electric Eye

OLD SATAN HIMSELF COULDN'T BEAT THIS Heat Control!



NEW GAS-FIRED, DRY-PAN

THURMADUKE

KEEPS EACH FOOD AT HEAT BEST FOR IT!

New high efficiency sectional control means that you can hold mashed potatoes at 125°, roast beef at 145°, soups at 160°, and turnip greens at 212° **as they should be!** Customers get that just-off-the-range flavor all the time. Moreover, waste due to underheating and overheating is completely eliminated!

CUTS UPKEEP 2/3 OR MORE

There's no water to heat—radiation plates do the job, directly, quickly (from cold start in ten minutes); sections may be used as needed; and insulation holds the heat where it belongs!

Tests by Gas Companies Throughout America Prove These Facts.

8 FEATURES

1. Sectional control
2. Radiation plates
3. Interchangeable top plates
4. Insulated body
5. Baked enamel finish
6. Standardized parts and extras
7. Hard maple carving board
8. Adjustable bell-shaped feet

Operators! Gas Companies! Thermaduke will help you solve your sales problem! **Mail Coupon Today**

Duke Manufacturing Co., St. Louis, Mo.

Please send more information.

Name .....

Address .....

City ..... State .....

440 Installations In 24 Countries

prove the ability of Glover-West carbonizing plants to produce gas at low cost and also make a highly reactive coke ideal for the domestic market. The tar has low water content and viscosity excellent for road material.

Write for complete details.

WEST GAS IMPROVEMENT CO.

424 MADISON AVENUE NEW YORK, N. Y.

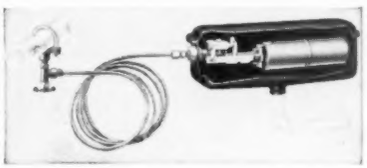
More than 65 years of dependable service to the gas industry.

Solenoid snap-action gas valve prevents diaphragm troubles. The kettle is of heavy 14 ga. polished cold rolled steel and cabinet is all chrome steel. Made in counter or floor types.

Full description of both units in bulletin 105 issued by Anetsberger Brothers, 3507 Elston Avenue, Chicago.

Humidifying Valve Features "Snap Action"

It is a well known fact that the high temperature in humidifier pans causes lime and scale formation, especially when the water



Humidifying Valve

supply is hard, and that there is always a certain amount of mud and foreign matter in the pan. The presence of scale and foreign matter often chokes the valve orifice or causes the valve to stick in the open or closed position, either flooding the basement floor through the over-flow pipe or stopping the water supply to the pan and destroying the entire humidifying effect.

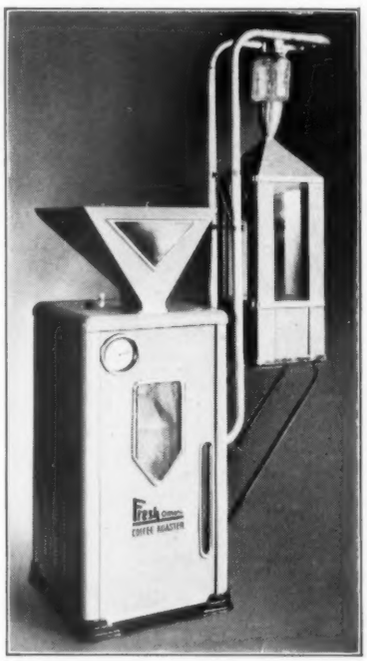
The new "snap action" valve was designed to eliminate the possibility of the valve sticking or clogging under such conditions. A cam-and-roller action causes it to snap from tight closure to wide open whenever the water level drops a quarter of an inch. There is no slight cracking or seeping action. When the water level rises to the proper level the valve snaps to the closed position, seating tight against water pressures up to 150 lbs.

The humidifier control is made in three different styles, so it can be installed in any type of existing plant. No. 17 consists of the valve and float only, 10-9/16" in length. No. 117 includes the valve and float in a covered float chamber—size, 11" long x 3" wide x 4⅞" deep. No. 217 adds copper tubing and a simple means of tapping into city water supply line.

A bulletin describing the new valve is issued by McDonnell & Miller, Wrigley Building, Chicago.

Gas Fired Coffee Roaster

This new Fresh-omatic Coffee Roaster, a complete plant in itself, occupies less than 5 sq. ft. of space.



"Fresh-omatic" Coffee Roaster

It automatically weighs green coffee beans, projects them into the roasting oven where they are dry-roasted by gas, are then air-cooled, sorted and finally conveyed to a glass dispenser from which they are removed, ground and packaged by the retailer.

A. C. Waldvogel, a St. Louis designing engineer, invented the roaster after years of experimentation, during which he became convinced that dry-roasting in a gas-fired oven is superior to any other method.

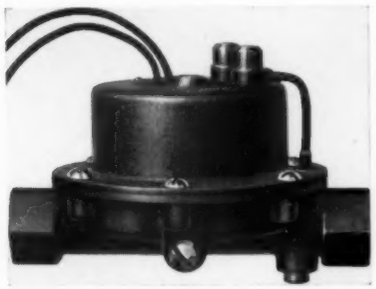
Made and marketed by Fresh-omatic Coffee Roasting System, 1213 Pine Street, St. Louis, Mo.

Diaphragm Type Control Valve

Spencer Thermostat Company of Attleboro, Mass. are just placing into production a new electrically operated diaphragm type main gas control valve.

It is similar to previous types but with improvements in appearance, operation, and performance. These valves consist of a diaphragm valve section, together with a thermally operated electric head which is mounted integrally on the former. A small heating element located adjacent to the disc is wired in series with a two-wire room thermostat or other control. When thermostat calls for heat, circuit is made through heating element causing disc to snap into open position, thereby operating the valve. When thermostat is satisfied, circuit is broken and heating element cools, permitting disc to snap into closed position closing valve in turn.

The powerful snap-action of the positive-operating disc eliminates any possibility of sticking and, being thermal, operation is silent and there is no magnetic hum. A time



Spencer Control Valve

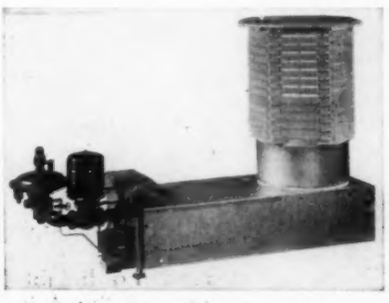
delay of 20 to 30 seconds between action of thermostat and valve prevents chattering or backfiring from momentary current failures. Diaphragm and valve face are made of synthetic materials which are inert to the action of all gases, thus adapting this new valve to manufactured, natural, and the bottled gases. They are available with both puff bleed and constant bleed operation.

Power consumption has been reduced to 5 watts, and gas capacities of from 180 cubic feet per hour through 1,000 cubic feet per hour are available in this new line of valves.

Republic Conversion Burner and The Humidifier Unit

To its long established principle of Radiant Heat transmission the Republic Burner has now added the Republic Gradient-Heet Control.

With this new form of control the conventional "Stop and Go" method of heating has been re-



Republic Conversion Burner

placed by continuous heating on all but the mildest days of winter. This new control has been added without any change in the major parts of Republic equipment, and can employ the same automatic gas valve, thermostat, and limit control which have been standard with Republic for many years.

The Republic Humidifier

The Republic Humidifier is an independent gas-fired unit designed to furnish the proper humidity for the home, regardless of the type of heating plant. The humidifying unit is placed in the basement and connected to a small floor grill. The humidity is discharged into the living quarters in a stream of heated air to insure rapid diffusion and freedom from condensation. The Republic Humidifier is sold at a price that will make this service popular with the average home owner.

Both units made by Autogas Co., 2258 Diversey Parkway, Chicago.

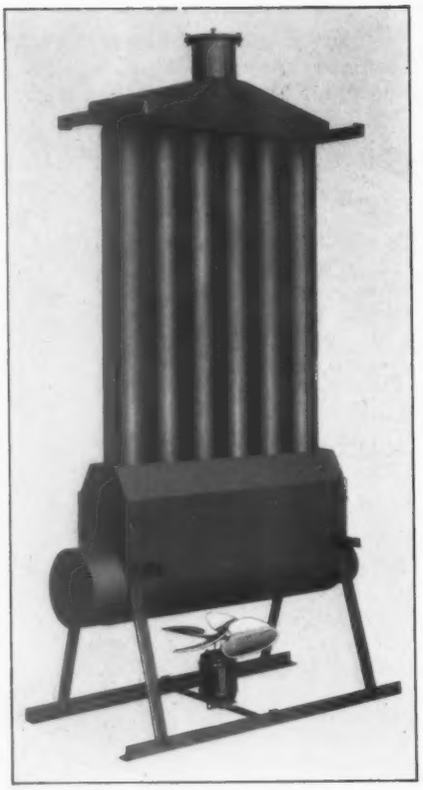
Forced Air Circulating Gas Heater for Small Homes

Designed primarily for installation on the floor to be heated the Reznor gas heating unit has an input rating of 60,000 and output of 45,000 Btu. per hour.

The air enters the bottom of the heater but can be introduced on either side when installed in the basement.

This small, compact, light weight unit occupying a floor space about 17 x 33 inches with a height of 5', 5" to the center of the 4 inch flue is equipped with a 1/50 h.p. motor fan to circulate the heated air from the heat exchanger as shown in the cut. Retarded flue travel and large radiation area insure high fuel economy. Has AGA approval.

Complete description will be found in Bulletin K060 issued by Reznor Manufacturing Company, Mercer, Pa.



Reznor Heater with Casing Removed

Roberts-Gordon Conversion Burner

In this conversion unit, a new principle in gas flame propagation and heat distribution is employed.

"Spreader-Flame" Burner

The "spreader-flame" burner is designed to carry part of the mixture of gas and primary air in a stream through a single burner port, the secondary air being introduced into the stream at an angle. This results in a cyclonic mixing at the point of combustion. A horizontal round plate over the flame deflects it outward so that it follows up side walls of furnace or boiler.

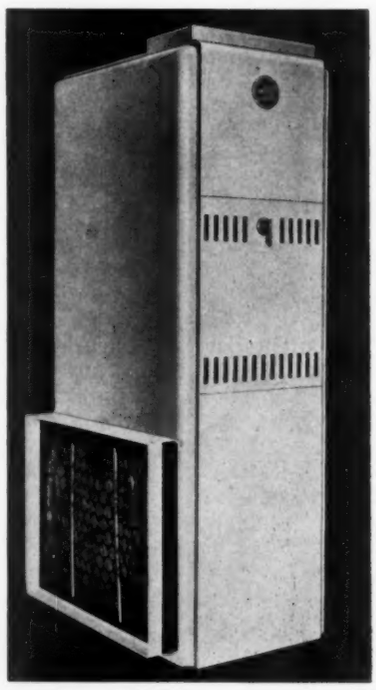
Available with complete automatic control through use of special regulating equipment.

A Bulletin issued by Roberts-Gordon Appliance Corp., Buffalo, N. Y., gives complete details.

Vertical Gas Heating Unit

The Yorkaire Heat vertical gas-fired air conditioning furnace is designed for correct winter air conditioning in small bungalows, single-floor homes, or even apartments. It can be installed in a closet, utility room, basement, or out-of-the-way corner. Advantages: extremely small floor space; finned cast iron heating element; efficient air filters; humidifier to supply correct moisture to air; circulating fan which can be used in summer for ventilating. Only four connections are necessary: gas line, room thermostat, electric line, water line to humidifier. It is available in three sizes, and priced to reach low-cost housing projects.

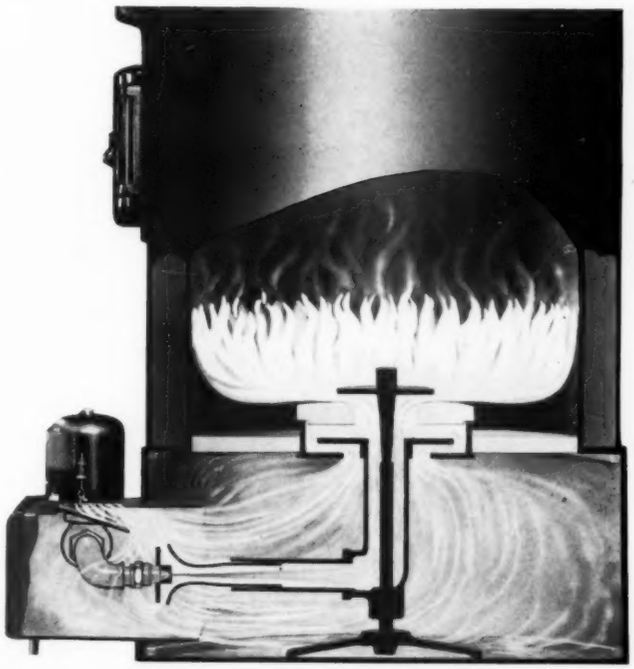
Made by York Ice Machinery Corporation, York, Pa.



Yorkaire Gas Heating Unit

The Burner That Is Revolutionizing Gas House Heating

EFFICIENT—DEPENDABLE
ECONOMICAL—SILENT



THE GORDON SPREADER FLAME BURNER, SAVES MONEY IN THREE WAYS—

LOW INITIAL COST

LOW INSTALLATION COST

LOW SERVICE COST

GORDON
SPREADER FLAME CONVERSION BURNER

This remarkable burner operates on an entirely new, improved and simplified principle of combustion.

One size burner takes care of all average size houses, whether the boiler or furnace is round or rectangular.

Made in four types illustrated below with a wide range in applications, capacities, and prices.

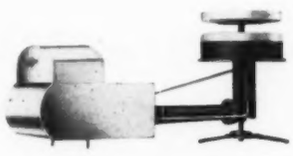
Service cost reduced to an amazing degree.

Exclusive features of the Gordon Spreader Flame Burner include

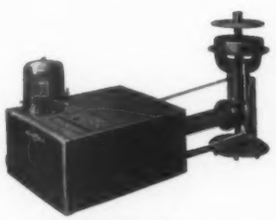
Iris Adjustable Gas Orifice—provides easy regulation of gas input for varying capacities and gases of different heat values.

Telescoping Mixer—makes burners interchangeable in a wide range of boilers and furnaces . . . burner can be moved from one house to another without trouble.

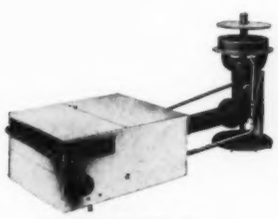
Automatic Quick Action Pilot—NEW PRINCIPLE—provides absolute safety and dependability. Gas valve automatically closes when pilot goes out.



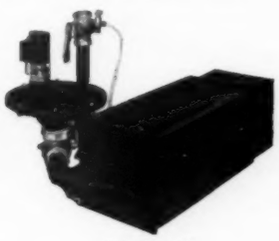
SERIES 84



SERIES 302



SERIES 302-20



SERIES 400

WRITE TODAY FOR CATALOG AND PRICES

Roberts-Gordon Appliance Corporation

BUFFALO, N. Y.

Universal Gas Ranges

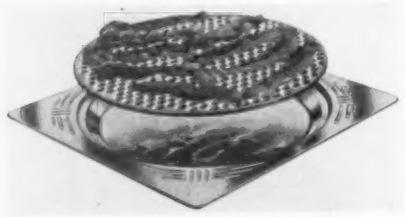
Cribben and Sexton Company of Chicago are making rapid strides in placing cooking on a purely automatic, care-free basis. Their modern line of Universal Gas Ranges presents advanced devices which assure cooking success every time, without constant supervision and attendance.

Universal "Marlboro" Range

For Top Burner Cooking . . . Universal offers Simmer-Save Burners which give an automatically controlled boiling heat at a "click" of the gas valve. These burners make it possible to cook the healthful economical way with but small amounts of water. In addition, they bring a savings of nearly 35% of gas per meal. Simmer-Save Burners provide a new range of cooking heats from a controlled boiling heat to a true keep warm heat, and open an entirely new realm of top-burner cooking service to the homemaker, offering her greater convenience — increased economy — and complete freedom of time.

The Universal Precision Oven with its advanced devices has definitely taken the fuss—the bother—the worry out of oven cookery. It makes possible low temperature oven cooking with its attendant greater food and fuel economies. Excess heat is completely eliminated—foods retain their natural flavors and nourishing juices. The Universal Oven gives the maximum in flexibility of use. It is adaptable for every known method of oven cookery whatever the requirement — high temperature or extremely low temperature. Roasting . . . Baking . . . Canning . . . Universal guarantees success each and every time without constant oven-peeking and continuous supervision

For Broiling, Universal presents Astogril Broiler with Savory-Smoke-Proof Broiler Grid. This grid has hundreds of small holes countersunk on either side. These holes provide for instant drainage of melting fats because the meat has only a pin-point contact with the surface of the grid and there are no

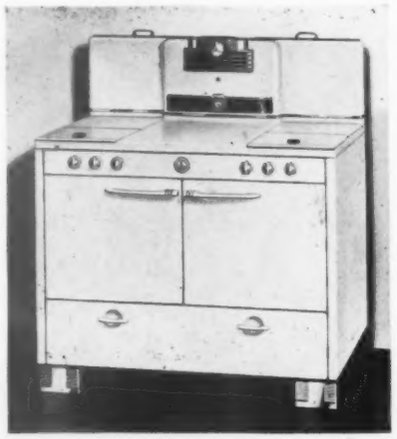


flat surfaces to which melting fats adhere. These fats drain into the shining broiler pan directly below the grid. This pan is finished in chrome and its surface reflects the heat, thus providing a low-temperature zone which keeps the greases free from all possibility of smoking and burning. The Universal Broiler with Savory-Smoke-Proof Broiler Grid removes all the dangers from Broiling and enables the homemaker to prepare healthful, delicious broiled foods without the slightest fear of failure.

Magic Chef All-American Gas Range

Newest development of American Stove Co., Cleveland, O., in gas range design is the Magic Chef All-American.

Oven of the new All-American is over-size, 18" wide, 20" deep, and 14" high, big enough to accommodate a 25 or 30 pound turkey with ease. Cooking top is 42" by 24", with burners centered 12" apart to allow room for large utensils. The Magic Chef Swing-Out Broiler is also larger, and allows for barbecue cooking of roasts or fowl, as well as ordinary broiling.



Magic Chief Model 30101-14

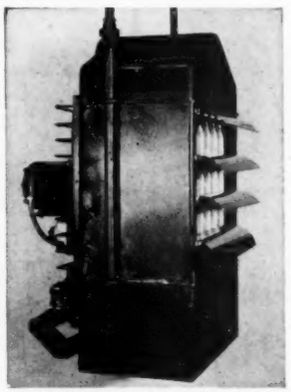
Broiler has six racks and oven has four. Burner grates are flush with cook top to eliminate tilting of utensils, and coveralls are flush when closed. Two disappearing shelves may be pulled from the range back when needed for use as plate warmers or general utility as desired. Back is extra-high to protect kitchen wall.

New design cooking timer, lamp, and flue grill are in chrome finish, as are the range base ends. Roomy utensil drawer below broiler has one-piece front strip that covers gas adjustment mechanism also.

Standard All-American is known as Model No. 101-14, while the CP model is No. 30101-14.

Suspended Unit Heater

A new gas-fired unit heater, operating without steam or water and completely self-contained, has just been added to the line of heating units manufactured by the Automatic Gas Steam Radiator Company, Pittsburgh, Pa.



Suspended Unit Heater

The unit is suspended from the ceiling, out of the way, and employs natural or manufactured gas for fuel. In addition to heating, it may be adapted for other purposes such as ventilating, cooling and drying.

The gas fires into a combustion chamber, the products of combustion being passed upward through a bank of tubes and out at the rear of the housing. Air is passed around these tubes by means of a motor-driven fan located on the back of the unit. The assembly includes a safety pilot which turns off the gas if the pilot goes out or burns too low to insure ignition.

The 1940 Model Servel

The 1940 Servel Electrolux gas refrigerator combines beauty and a maximum of storage space through a flexible interior.

The storage space of the refrigerator has a three way sliding main shelf which may be easily raised or lowered with as much as thirty pounds of food on it. Simple rotary movements of the handles at each end of the shelves easily move the shelf into the desired position.

1940 Model

Deep porcelain trays can be placed in various positions within the storage space to suit the housewife's convenience. Moisture control permits keeping vegetables garden fresh in the deep trays.

Full width doors with concealed hinges create the impression of a larger front surface. The shell of the refrigerator is made of one-piece steel frame.

1941 models will be soon released throughout the country.

New Air Conditioning Furnace

A "gas saver" for small homes, is the description applied to a new model in the line of Superfax air conditioning furnaces announced by Perfection Stove Company, Cleveland, Ohio. Featured as supplying "24-hour air conditioning," it operates on the 3-stage principle. It is also a space saver, for it occupies only approximately four square feet of floor space.

"In most small homes this 3-stage system calls into use the second stage which is a low, or coasting fire, during most of the time, and in milder weather alternates between coasting and pilot stages, with continuous blower operation, thus avoiding stratification," the announcement says.

Superfex Gas Furnace

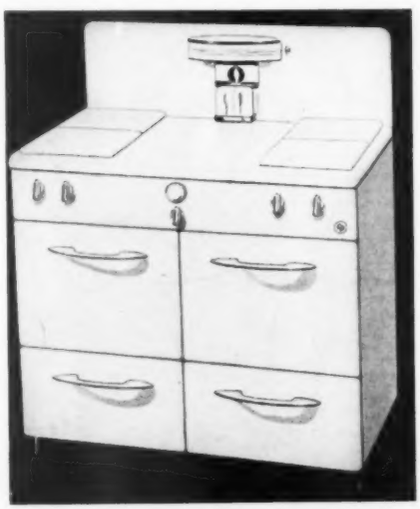
The combustion chamber has dual radiators, made of 16-gauge steel, with eight baffles each. Heating capacity at registers, 66,500 B.t.u. (gas input—A. G. A. rating—87,500 B.t.u.).

The furnace is available also with a single speed motor, for on-and-off operation.

The manufacturer's line includes gas-burning furnaces in several sizes, small, medium and large rooms.

New Detroit Jewel CP Gas Range

Illustrated is a new popular-priced Certified Performance Gas Range recently introduced by Detroit-Michigan Stove Company, 6900 E. Jefferson Ave., Detroit. Included among the outstanding features are: extra large storage space provided by a service drawer and an unusually large swing door compartment; dual type top burners with separate simmering flames, including two giant burners; modern "toe-room" recessed base.



Detroit Jewel CP Range

The Roper "Whitehall" C.P. DeLuxe Gas Range

One of many favorites in the complete Roper line of smart gas ranges is the "Whitehall." Equipped with big "3-in-1" Oven, assuring speed, heat distribution and economy . . . "Peasant-Ware" Broiler with Serve Tray . . . "Simmer-Speed" Burners . . . "Lifetime" Cooking Chart . . . "Chime-O-Stat" control, and many other outstanding refinements. It's one of the most popular of current Roper gas ranges.

Roper DeLuxe CP Range

One of the highlight features of this range is the exclusive Roper patented staggered top. It is particularly popular with homemakers because of the fact it lets them use 4 large utensils at one time with the greatest of convenience.

Made by Geo. D. Roper Corporation, Rockford, Ill.

Air Conditioning Gas Furnace

New XXth Century All-cast Air Conditioning Gas Furnace. It has a double gear radiator, which increases the heating surface with a minimum restriction to the even flow of heat, and takes the maxi-

XXth Century Gas Furnace

mum of heat from the fuel consumed.

It is equipped with a sturdy blower and filter screens which insure clean warm air throughout the house.

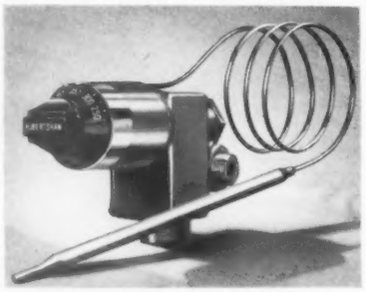
Made by XXth Century Heating and Ventilating Co., Akron, Ohio.

Hotstream Storage Heater

The Copper-clad Model A water heater is a late product of Hotstream Heater Co., Cleveland, O. It is the automatic storage type, and the tank consists of a layer of copper alloy on a steel base. The sheet of copper is bonded inseparably to the steel base by an alloy bond, which alloy is in reality integral with the steel. It is an underfired, outside flue, quick recovery heater, and is equipped with safety pilot, thermostat and fully insulated. It comes in 20 to 60 gallon sizes.

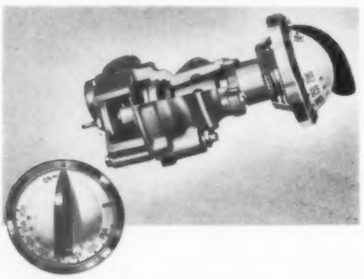
Hotstream Model A Heater

Robertshaw Thermostats



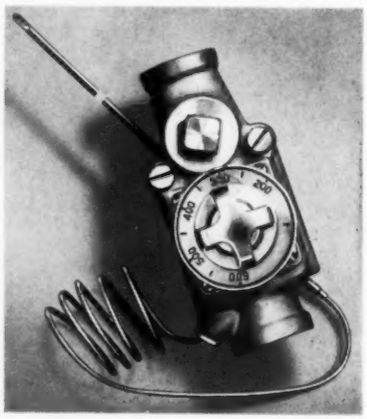
MODEL XS-F: Snap Action Type

Self contained, single unit for natural or manufactured gas. Operates in any position. Can be cleaned without interfering with calibration or mounting. The dial body is a heavy casting which protects valve and snap-action mechanism against abuse in handling and shipping.



MODEL BJ: Oven Heat Control

Gas cock and dial are combined in one unit operated by one motion. Gas can't be turned on without setting thermostat nor turned off without bringing it back to off position. Every cooking operation must be done with controlled heat. Dial combined with double safety plug-type cock. Has new simplified front calibration by-pass and pilot adjustment. Non-clog by-pass key is accurate and dependable on all types of gas. Patented electric-welded, stainless-steel, solderless, non-corrosive Diastat.

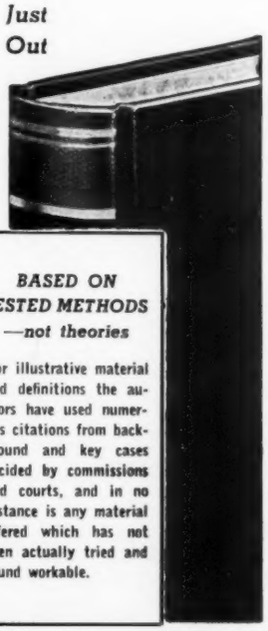


MODEL BN: Throttling-type Oven Controller

Large capacity throttling-type controller for commercial cooking equipment. Has special non-slip construction preventing dial turning on temperature shaft and disturbing calibration. Easily accessible for cleaning. Has front by-pass and pilot adjustment. Made with four optional outlets.

How to determine fair and profitable utility rates

Just Out



Here is a timely book which fully covers public utility rate determination, service and discrimination, treating the subject from the viewpoint of the engineer and manager rather than from that of the lawyer or economist.

Elements of

UTILITY RATE DETERMINATION

By John M. Bryant and Raymond R. Herrmann

464 pages, 6 x 9, $4.50

Filled with usable, factual information this book discusses the factors, methods and problems of evaluating public utility property and service for rate-making. In it the authors give the reasons for regulation of utility rates, describe the methods used to accomplish regulation, and outline the practical limitations involved.

In clear, practical terms, it brings you the essentials of valuation, depreciation, expense, return, etc., as factors in the establishment of proper rates for the various utility services.

BASED ON TESTED METHODS —not theories

For illustrative material and definitions the authors have used numerous citations from background and key cases decided by commissions and courts, and in no instance is any material offered which has not been actually tried and found workable.

American Gas Journal

53 Park Place, New York

New Oxweld Regulators

The Linde Air Products Company, a Unit of Union Carbide and Carbon Corporation, 30 East 42nd Street, New York, announces the addition of three new single-stage, general service regulators to its Oxweld line of welding and cutting apparatus. These regulators, the Oxweld R-80 oxygen regulator for the delivery of oxygen at working pressures up to 200 lb. per sq. in., the Oxweld R-81, its companion acetylene regulator, and the Oxweld R-82 fuel gas regulator, feature simplicity of design and reliability of operation. They are strongly built and are designed to give completely dependable performance in all welding, cutting, and deseaming operations where simplicity of construction and large capacity are demanded, but where the refinements of Oxweld two-stage regulators are not required.

The R-80 and R-81 regulators are of the stem type—that is, the valve closes with the incoming pressure to assure positive seating action. The materials used for the valve seats are selected for efficient service and long life. The passageways are of sufficient size to permit unrestricted flow of gases. In addition, the R-80 oxygen regulator has a special inlet screen formed of a double thickness of fine mesh to filter out dirt and foreign particles.

The third regulator, the new Oxweld R-82 fuel gas regulator, also is of the stem type and is for use with various other gases, such as "Pyrofax" gas, propane, and butane. It has the same operating advantages and construction features as the R-81 acetylene regulator.

Gaylord P. Buck On Promotional Advertising

Gaylord P. Buck, Vice President and General Manager, Public Service Company of Colorado, Denver, Colo., presented a paper at the Annual Convention of Public Utilities Advertising Assn., Chicago, June 25, 1940 entitled "What Sales Management Expects from Advertising." The following excerpts, every one connected with a gas company organization can study to their advantage.

*

"This is a great business of ours, and you have got to get the feel of it, you have to love it, you have to know what is back of it, you have to believe in it, and you have to put something into it that you will never be able to take out. As one of the speakers said this morning, "Only by giving can you receive."

*

"Now, I do believe that I can say to you that selling is just as scientific as engineering. The proper approach made at the proper time in the proper way will yield you an order every time. I have said to my own selling organization many times that anybody can sell anything to anybody at any time. That is saying a lot, but it can be done. Of course, I have seen in our own and other organizations occasions when just the reverse of that statement was the case."

*

"And I would say to you, as advertising people (I am saying this to you as a prosaic salesman), that the biggest thing you can possibly do in your field of endeavor for the public utility business, as such, is to *create, not imitate*. That is what you are confronted with. Tomorrow's problem will be solved by the creative imagination which you men and women shall put down on the paper that catches the public fancy of tomorrow."

*

"We are in the business of raising the standards of living. We are in the business of service—service to our fellowman, for which we never get paid, for which we never expect any pay, except the payment which comes from the satisfaction of being able to do something for somebody else without expecting any definite reward."

*

"The public utility business in any of its phases—regardless of what part you may play in it, regardless of how small or tiny you may feel it to be at times—offers an individual something which no other business does or ever will offer. As a salesman in this business, I personally am proud of the fact that I have gotten something out of this business in an intangible sort of way, something which I cannot put into words, and yet at the same time it has given me an opportunity of serving—and it has given all of you that same sort of opportunity."

*

"What are you building for tomorrow? Are you building something worthwhile? Are you so conducting yourself at this particular time that you can bridge the gap of tomorrow, no matter how deep the abyss? I believe that is true, and I believe that on the shoulders of the advertising group of people in the public utility business rests the job of leading the way into tomorrow."

Flexible Couplings. A new 20-page data book has just been published by Ajax Flexible Coupling Company, Westfield, New York, manufacturers of flexible couplings for direct connected machines.

This book is essentially a hand book planned for design and maintenance engineers as well as purchasing executives. It gives complete tabulated data on horsepower and torque ratings as well as dimensional specifications on the complete line of forged steel and cast iron couplings, including conventional and shear pin types.

Natural Gas Recycling

A short course on natural gas recycling is to be given on November 5th and 6th at the Texas College of Arts and Industries, Kingsville, Texas, under the auspices of the American Recycling Association.

Temporary officers for the association are: R. L. Peurifoy, Texas A. & I. College, Chairman; Mr. E. E. DeBack, Coastal Recycling Corporation; Mr. E. V. Foran, Foran, Knode, Boatright & Dixon; Mr. Jack Winters, United North and South Development Company; Mr. C. H. Gee, Corpus Christi Corporation; Dr. Frank H. Dotterweich, Texas A. & I. College. It is planned to elect permanent officers during the meeting.

The program will include the following: Address of Welcome—J. O. Loftin, President A. & I. College; Methods of Condensate Recovery and Discussions—Henry Wade of Parkhill-Wade, Los Angeles; Inspection Trip Through Condensate Plants; Prediction of Sub-surface Flows and Discussions—E. V. Foran, of Foran, Knode, Boatright & Dixon, Houston, Texas; Deviation of Natural Gas from Boyle's Law—George Granger Brown, University of Michigan; Testing and Sampling Methods Used on Condensate Wells—Speaker to be Selected; Physical Properties of Hydrocarbon Mixtures in Condensate Production—Dr. Frank H. Dotterweich, A. & I. College; The Operation of the Podbielniak Apparatus—Mr. Walter J. Podbielniak, Chicago, Ill.

J. D. Davis, District Manager

J. D. Davis has been appointed district manager of United Gas Pipe Line Company at Jackson, Miss., to succeed J. P. Rogers, who died September 17, according to a recent announcement by N. C. McGowen, president.

Mr. Davis has served as Jackson district pipe line superintendent for the past eight years. He entered the service of one of United's predecessor companies in 1924 as a time keeper, advancing to district foreman at Beaumont, Texas, in 1930. He was made section foreman at Nederland, Texas, in 1932 and in the same year was transferred to the Jackson district of the company.

E. P. Hayes Joins Olsen

Edward P. Hayes has become Vice President of The C. A. Olsen Manufacturing Company, Elyria, Ohio, manufacturers of "Luxaire" furnaces and air conditioning units.

For many years Olsen and Hayes were associated together with the Fox Furnace Division of American Radiator & Standard Sanitary Corporation, of which Mr. Olsen was president and Mr. Hayes was in charge of sales promotion and sales.

This announcement indicated a resumption of this association after an interlude during which Hayes served as Vice President of May Oil Burner Corporation of Baltimore, Maryland

Cooling By Gas

Air Conditioning Systems in So. California Described at L. A. Chapter of A. S. H. V. E.

By
Fred A. Herr,
Los Angeles

NATURAL GAS energized air conditioning systems were the subject of an address presented at the June 18 meeting of Los Angeles Chapter, American Society of Heating and Ventilating Engineers, by James W. Hill, Heating and Ventilating Engineer of the Southern Counties Gas Co.

Mr. Hill's was one of four short talks which presented the subject of air cooling from as many angles. Mr. Hill talked on "Cooling by Gas"; Edward L. Nelson, Union Ice Co., Los Angeles, on "Cooling by Melted Ice"; L. J. Hungerford, Utility Fan Co., Los Angeles, on "Evaporative Cooling"; and E. L. Cobby, Gay Engineering Co., Los Angeles, on "Cooling by Mechanical Refrigeration."

Mr. Hill touched upon the four classes of gas air-conditioning systems, namely: the gas engine driven compressor; the absorption system; the moisture removal system using such absorbents as silica-gel, activated aluminum or lithium chloride; and the steam jet system.

"Of these four," said Mr. Hill, "the Southern Counties Gas Co. has had first-hand experience with only the absorption system insofar as air-conditioning work is concerned. However, we have on our lines a number of ice plants using gas engine driven compressors for the making of ice and since the production of ice and cooling of air for air-conditioning are so closely related, we feel that we know something about this type of installation."

Mr. Hill first described a gas engine conditioning installation used by the Southern California Gas Co., a sister company, in its building at 810 South Flower St., Los Angeles, for supplying conditioned air to a part of its offices on the first, mezzanine and second floors. This installation consists of a Frick, single acting, two cylinder compressor having a capacity of 50 tons and a six cylinder, 50 h.p. Waukesha engine, running at a top speed of 1300 r.p.m. The speed of this engine, Mr. Hill declared, can be varied from 800 to 1300 and the clearance pockets of the compressor can be varied to give a 50 per cent reduction in capacity. The capacity of the installation as a whole, therefore, can be varied about 75 per cent to suit existing conditions. Speed of the engine and position of the clearance pockets are controlled automatically by thermostats in the return air duct.

"I am told," Mr. Hill asserted, "that this is the only air-conditioning installation in this part of the country which has a constant suction pressure. The equipment must be started manually but is entirely automatic thereafter."

The gas company engineer pointed out an interesting feature of the installation is that the equipment is carried by a concrete slab which is spring mounted to prevent vibration from being transmitted to the building. The engine exhaust, Mr. Hill explained, is muffled and then discharged into the smoke stack of the building. An evaporative condenser is used to condense the refrigerant and the discharge air from the evaporative condenser is used to cool the jacket water of the gas engine.

Two absorption gas energized air condition systems which have been installed in divisional offices of the Southern Counties Gas Co. were described by Mr. Hill. One is installed in the Pomona, Calif., branch office, another in the Santa Ana office, and a third is to be installed this summer at Monrovia, Calif.

The Pomona and Santa Ana jobs are Williams Air-O-Matic units having a nominal capacity of 14 tons and using Freon-21 as a refrigerant and di-methyl ether of tetra-ethylene glycol as an absorbent. Both machines use low-pressure steam supplied by separate gas-fired boilers, but require electric energy for auxiliary equipment, absorbent pump cooling water and air-supply fan. Both use direct expansion coils for cooling and steam blast coils for heating.

The cooling portion of the Pomona office is arranged to be switched from the office space to an auditorium which is only used two or three times a week. During the time the auditorium is in use, the office force is deprived of cooling, but since this is usually for only a short period and the building has a time lag of several hours, very little discomfort is experienced. According to Mr. Hill, heating of this branch office is accomplished by steam radiation supplied by the same boiler which supplies the Williams machine, the steam pressure being reduced from 14 pounds to two pounds. During the heating phase, the ventilation air is tempered by steam blast coils in the duct system. The control is a semi-automatic system in that the temperature is thermostatically controlled, but the selection of heating or cooling is controlled by switches which must be manually operated. Manual dampers in the ducts are used to change from office to auditorium cooling. This system, Mr. Hill announced, has been in operation for two cooling seasons and has proved exceptionally satisfactory.

In describing the Santa Ana office system, Mr. Hill said, a steam blast coil is used in the air duct for heating, with the fan kept in constant operation. There is no auditorium to complicate the control, so a completely automatic system was installed. Temperature is held constant the year round, except that on cooling, the control holds a maximum of 15 deg. F. below the outside temperature. The system automatically selects either the heating or the cooling phase, as needed, to maintain constant conditions.

"It is interesting to note," said Mr. Hill, "that this system utilized cooling during the middle of the day on many days during the past winter, the cycle changing from heating in the morning to cooling during the middle of the day, and back to heating late in the afternoon. This system has also been in operation through two cooling and three heating seasons and has been entirely satisfactory."

Mr. Hill declared that an experiment had been conducted with this installation, immediately after it had been installed and tested. It was turned on and left on full automatic control, he declared, to determine how long it would run without service.

"Routine checks were made," said Mr. Hill, "to determine the condition of the machine, but no service work was done. Seventeen months later, after one full cooling season and part of another, it was necessary to remove the lime from the evaporative condenser. It has now been nearly three years and this is the only service work that has been done.

News of the Gas Industry

Some Highlights of the Annual Convention of the Pacific Coast Gas Association

The Forty-seventh Annual Convention of the Pacific Coast Gas Association held at Coronado, California, September 18-21 broke all existing Association records for attendance. The total registration was 792—the previous high being 656 in San Francisco in 1936.

Mr. Robt. A. Hornby, Vice President of Pacific Lighting Corporation, was elected President of the Association; Mr. W. G. Vincent, Vice President of Pacific Gas and Electric Company, was elected Vice President and Mr. D. G. Martin, General Auditor of Pacific Gas and Electric Company, was elected Treasurer. The new Directors elected were Mr. R. G. Barnett, Vice President-General Manager of Portland Gas and Coke Company, Portland, Oregon; Mr. W. C. Mainwaring, General Sales Manager of British Columbia Electric Railway Company, Ltd., Vancouver, B. C., Mr. H. W. Edmund, Sales Manager of Coast Counties Gas and Electric Company, Santa Cruz, California; and Mr. W. R. Smith, Vice President of Continental Water Heater Company, Los Angeles, California.

The Association's maunfacturers section elected the following new officers:

Wayne R. Smith, Continental Water Heater Co., General Chairman; C. O. Menjg, Pacific Gas Radiator Co., General Vice Chairman; Hal Singleton, Grayson Heat Control, Ltd., Chairman of Accessories Div,; Alvin W. Ray, General Controls Co., Vice Chairman of Accessories Div.; Roy Ohnimus, Hammer-Bray Co., Chairman of Direct Heating Div.; L. E. McIlveen, Unimatic Heating Systems, Inc., Vice Chairman of Direct Heating Div.; C H. Pill, Hammel Radiator Corporation, Chairman of Furnace Div.; W. H. Johnston, Fraser & Johnston Co., Vice Chairman of Furnace Div.; E. J. Hinchey, Jas. Graham Mfg. Co., Chairman of Range Division; A. F. Rice, Occidental Stove Co., Vice Chairman of Range Div.; W. G. Cartter, Day & Night Water Heater Co., Chairman of Water Heater Div.; E. S. Hoyt, Jr., Hoyt Heater Co., Vice Chairman of Water Heater Div.

The American Gas Association was represented at the Convention by President Walter C. Beckjord and J. W. West, Jr., Secretary of the commercial section. Other general session speakers representing American Gas Association activities were Mr. Bernard T. Franck, Chairman of the American Gas Association refrigeration committee, and Mr. R. S. Agee, Sales Promotion Manager of the American Gas Appliance and Equipment Manufacturers.

ROBERT A. HORNBY
President P.C.G.A.
V.P. Pacific Lighting Corp.

In opening the Convention President Holloway announced that the Association would soon complete two projects which he believed of considerable importance to the industry—the first of these being a motion picture on gas cookery featuring Don Wilson and Hedda Hopper. The picture is in kodachrome with full synchronized sound, and according to Hollywood authorities the first such picture ever made. Mr. Holloway said that arrangements were being made to make prints of the picture available to all gas companies at a reasonable cost. The other project was a sales training course for both gas company and dealer salesmen which would be available for distribution under the provisions of the George Dean Act. This course will be ready later this year and will be first put into effect in California. It is, however, available for use in other states which have supporting state legislation.

One feature of the Convention which attracted a great deal of comment was an evening of entertainment provided by the Association's manufacturers section. This included a skit put on by the manufacturers entitled "The Court of Pedler's Opinion" and involved a court scene complete with Judge, Clerk, Bailiff, attorneys for Defense and Prosecution, policemen and so forth. Called before the court and tried for their offenses against the manufacturers were the leading sales executives of the Pacific Coast utilities. All were finally acquitted but not without considerable trouble.

The Association's Awards Committee granted a Committee Award to Mrs. Marguerite Scroggie, chairman of the Association's Home Service Committee. Mrs. Scroggie did a great deal during her year in office to further home service work on the Pacific Coast, and included in her Convention program was a short presentation on a C-P range entitled " A Lyrical Gasconade."

The Awards Committee awarded honorable mention to the following papers:

Accounting Section—"A Classification of Accounts for National Gas Companies," Charles Grunsky, Chairman.

Sales and Advertising Section—"Long Range Planning for profitable Business Building," J. H. Gumz, Pacific Gas and Electric Company.

Technical Section—"Modernizing Our Older Gas Compressing Equipment," by C G. Cortelyou, T. J. V. How and F. H. Noltimier, of General Petroleum Company, "Equipment and Methods for Cathodic Protection Surveys," by H. J. Keeling, Southern Counties Gas Co.

Honorable mention was awarded to the Industrial Fuel Supply Company for its study of the design of permanent river crossing for important gas transmission pipe lines and the rapid installation of emergency crossings under disaster conditions. This study was presented to the Association in four papers, as follows:

CONVENTION CALENDAR

October

7-11 *American Gas Assn.* Twenty-second Annual Convention, Atlantic City, N. J.

21-25 *National Metal Congress and Exposition*, Cleveland. Will have Combined Industrial Gas Exhibit sponsored by AGA.

November

11-13 *Mid-West Gas School and Conference*, Iowa State College, Ames, Iowa.

14-15 *Mid-Southeastern Gas Assn. and Institute for Gas Plant Operators*, Raleigh, N. C., State College.

"Pipe Line Stream Crossings," by Robert T. Knapp, California Institute of Technology.

"Pipe Line River Crossings,"by Le Roy Edwards, Industrial Fuel Supply Company.

"Submerged River Crossings," by R. W. Todd and A. B. Polley, Industrial Fuel Supply Company.

"Emergency Equipment Materials and Organization," by M. L. Fort, Industrial Fuel Supply Company.

The Basford Trophy by a very narrow margin was voted to the Sales and Advertising Section—A. F. Rice, Occidental Stove Co., Chairman.

The Board of Directors of the Association awarded the Addison B. Day Medal of Honor to Mr. F. M. Banks, Vice President of the Southern California Gas Company, for his leadership dating back to 1935 in the cause of improving performance standards of gas appliances. In making the award President Holloway said:

"Through the farsightedness of the late Addison B. Day, the Board of Directors of the Pacific Coast Gas Association is privileged each year to consider the personal endeavors of members of the Association in behalf of the industry which we all serve, and—when these endeavors result in solid accomplishment of extraordinary usefulness,—to award the Medal of Honor which bears Mr. Day's name.

"The Gas Industry has one primary objective and that is to render a superlative service. One factor influencing the character of our service is the appliance in which gas is consumed. Some years ago—in 1935 to be exact—one of our members started preaching the desirability of a higher performance for gas appliances. He called attention to the fact that because of price the sale of mediocre appliances greatly outnumbered the sale of those which were most efficient, most convenient and most dependable. This was a growing evil because the buying habits of the people and the sales methods of the trade placed an economic pressure on the manufacturer to produce the type of appliance which would sell the most readily.

"The man of whom I speak went far beyond the necessities of his job to seek a remedy. He knew the trouble lay not only in the appliance but also in the sales psychology of the industry. He preached here and in national forums the basic idea that our manufacturers should produce appliances that would out perform all others and then shout this accomplishment to all the world.

"In the course of his crusade he conceived and conducted an experimental sales campaign which proved to the industry that our customers were seeking for quality more than they were for cheapness. In this campaign 14,000 of the highest grade ranges of that day were sold as against an expectation of less than 5,000.

"These ideas insistently advocated and proved, enlisted the aid of others and have changed the sales philosophy of the Gas Industry from one of defense to one of aggressive offense. From this new spirit within the industry has come many things not the least of which has been the Certified Performance program for gas ranges and perhaps soon for other types of appliances.

F. M. BANKS
V. P. Southern California Gas Co.

"We award the Addison B. Day Medal of Honor to Mr. Banks for an idea advocated with courage and since consistently supported."

Gas at the Brooklyn Navy Yard for Warship Construction

At the first of the 1940 Company Conferences of Brooklyn Union Gas Company held on September 10th, Carl Wierum, Manager of Industrial Division, discussed the many new applications and increased use of gas at the Brooklyn Navy Yard. Mr. Wierum introduced his talk by reviewing briefly the history of the Brooklyn Navy Yard. He said that it was established shortly after the War of 1812 and that since that time 64 warships have been constructed there, including some of the largest battleships afloat. At present the Yard is busy on two new 45,000 ton dreadnoughts, the Iowa and Missouri.

Recent activity in rearmament has served to increase the number of applications to which gas is put and to boost consumption until today the total stands at 35,000,000 cubic feet for the first eight months of this year.

Mr. Wierum described some of the new furnaces, forges and other gas-using appliances which have been installed at the Navy Yard. Many of these furnaces were constructed by the Navy Yard personnel with assistance in design and supervision from Brooklyn Union engineers. One of those described was the huge gun-turret annealing oven, which measures 56 feet long, 48 feet wide and 30 feet high. In this oven gun turrets nearly 50 feet in diameter and weighing as much as 40 tons are heated to a temperature of 1200° F to relieve the stresses caused by welding.

John J. Garland, Assistant Chief Engineer, presided at the conference.

Guard Public Properties Col. W. F. Rockwell Warns

National defense demands organized planning and protection of all public service properties, declared Col. W. F. Rockwell of Pittsburgh, Pa., President of the Water and Sewage Works Manufacturers Assn., and President Pittsburgh Equitable Meter Co., at the annual meeting of New England Waterworks Assn., held in New York, Sept. 24-27.

"Key men in these services should act now," warned Colonel Rockwell. "They should take steps to prevent possible intentional damage to plants and services by saboteurs as well as for local emergencies resulting from cyclones, earthquakes and floods.

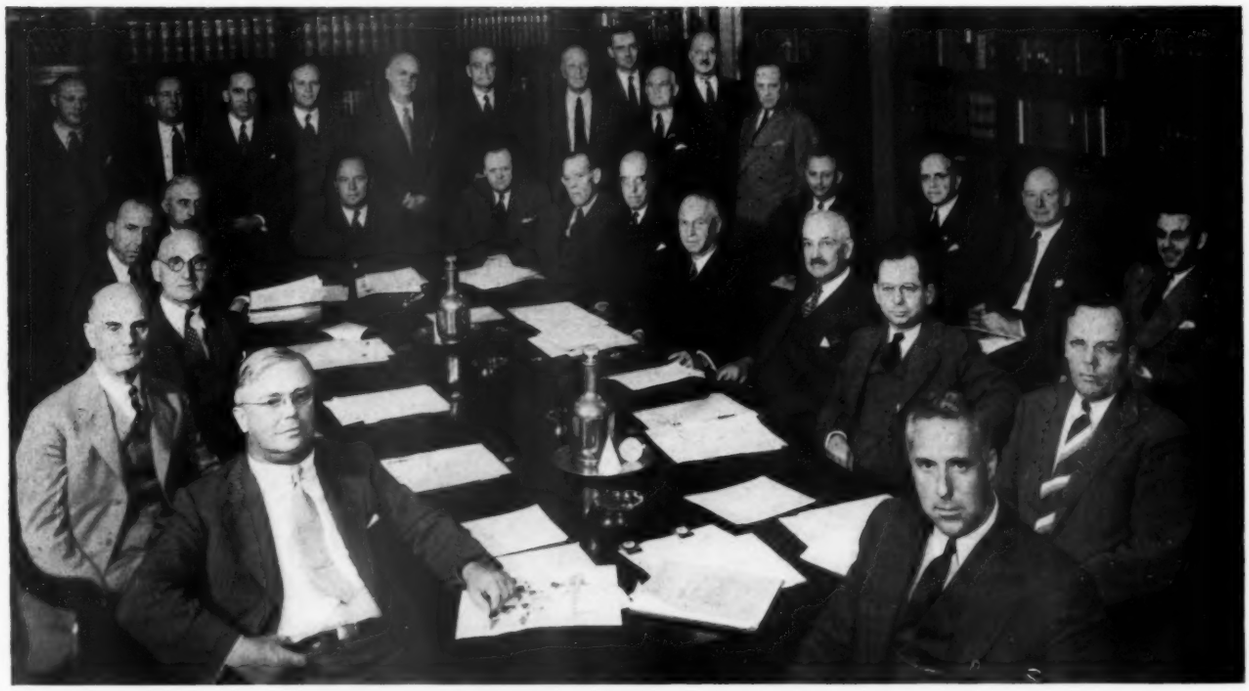
"Some municipalities have held joint conferences of their fire, police, street and sewer departments along with officials who direct water, electric, gas, telephone, street car and similar services, but many cities have not yet organized for defense or emergencies. Many organized groups meet daily or weekly.

"Examine every member of the personnel of these services. Eliminate people of doubtful national loyalty and develop intense company spirit. All services must cooperate in watching for suspicious acts or persons.

"Develop reserve and independent units which can be operated if the main system breaks down from any cause. Protective lighting equipment for emergency use at key points now is on the market. Install reserve pumping units for water, and similar emergency equipment for other public services.

"Assign the most trustworthy man in each department to defense and emergency protection and keep him free for such tasks.

"Every service official should act now to protect plants and services against 'crackpots.' Prepare for quick shut-offs, substitute supplies and the like, as well as organized protection."



EXECUTIVE BOARD OF THE AMERICAN GAS ASSOCIATION AT A MEETING IN NEW YORK, SEPTEMBER 10, 1940

Left to Right, around the table:
George F. Mitchell, President, The Peoples Gas Light & Coke Co., Chicago; George S. Hawley, President, The Bridgeport Gas Light Co., Bridgeport; P. S. Young, Vice-Pres., Public Service Electric & Gas Co., Newark; T. J. Strickler, Vice-President, Kansas City Gas Co., Kansas City; Alexander Forward, Managing Director, American Gas Association; Walter C. Beckjord, Vice President, Columbia Gas & Light Corp., New York; R. H. Hargrove, Vice President, United Gas Pipe Line Co., Shreveport; Mr. H. L. Dickerson, Ebasco Services, Inc., New York; Marcy L. Sperry, President, Washington Gas Light Co., Washington, D. C.; L. B. Eichengreen, Vice President, Philadelphia Electric Co., Philadelphia; Herman Russell, President, Rochester Gas & Electric Corp., Rochester; N. Henry Gellert, President, National Public Utilities Corp., Philadelphia; Frank H. Adams, Vice President, Surface Combustion Corp., Toledo; Ernest R. Acker, President, Central Hudson Gas and Electric Corp.

Back Row Standing:
Henry Obermeyer, Vice President, Consolidated Edison Co. of N. Y., Inc.; Kurwin R. Boyes, Secretary, American Gas Association: D. W. Harris, Vice President, Arkansas Natural Gas Co., Shreveport, La.; F. B. Flahive, Columbia Gas & Electric Corp., New York; Bruno Rahn, President, Milwaukee Gas Light Co., Milwaukee; John W. Batten, Vice President, Michigan Consolidated Gas Co., Detroit; F. M. Goodwin, Boston Consolidated Gas Co., Boston; F. T. Carmody, Counsel, 15 Broad St., New York; Frank H. Payne, President, American Meter Co., Erie, Pa.; N. T. Sellman, Consolidated Edison Co. of N. Y., Inc.; W. E. Derwent, Vice President, Geo. D. Roper Corporation.
Seated:
Elmer F. Schmidt, Vice Pres., Lone Star Gas Co., Dallas, Texas; Louis Ruthenburg, Servel, Inc., Evansville, Ind.; Davis M. DeBard, Stone & Webster Service Corp., New York; F. T. Rainey, Ohio Fuel Gas Co., Columbus, O.

6,000 Sq. Ft. A. G. A. Combined Exhibit at Metal Show To Feature Role of Gas in Tooling-Up for Defense

The 1940 A. G. A. Combined Industrial Gas Exhibit at the National Metal Congress and Exposition, Public Auditorium, Cleveland, Ohio, October 21-25, offers the biggest single opportunity yet—to sell gas and gas equipment for both ferrous and non-ferrous metal treating and melting.

As in previous years, the A. G. A. Industrial Gas Section will sponsor a Combined Exhibit covering 6,000 square feet of space, the largest exhibiting unit of the Metal Show; and 15 leading manufacturers of various classes of gas equipment for use in metal and metal products production will fit out and man with a total of at least 70 sales representatives individual displays within the combined area. Gas companies within a radius of 200 miles of Cleveland have also contributed to make effective, unified decoration possible, and to supply industrial gas sales representatives to help staff and service the huge Combined Exhibit at all times. In addition, of course, representatives of the A. G. A. Industrial Gas Section will be on hand to supervise and coordinate the entire exhibit.

The gas man's slogan at the show this year will be *"Industry needs Speed—Speed means GAS"*; and all presentations will emphasize the equipment and facilities available from the gas industry for fast, efficient, flexible, up-to-date metal treating and melting. The back wall of the central lounge provided for the general gas industry story will feature a huge chart (80 square feet in size) showing the actual year-by-year growth of both industrial gas consumption and general business activity since 1929. It will be obvious at a glance that using the year 1929 as a base, the use of gas by American industry has grown very much more rapidly than general business activity itself—that the use of gas by industry for the first six months of 1940 was 50.4% above 1929, whereas general business activity (Standard Statistics Index) was only 5.8% above 1929.

Equipment to be covered by the manufacturers' displays will range in size all the way from tiny burner tips to tremendous contract ovens and models of furnaces several hundred feet in length—and in character all the way from large water heaters, boilers, and controls to recirculating air heaters, atmosphere furnaces and radiant tubes. Within the confines of the *A.G.A. Combined Industrial Gas Exhibit* will be shown equipment for doing practically every conceivable type of heating job encountered in any branch of the metal industry's operations. The list of exhibiting manufacturers will include: American Gas Furnace Co., Burdett Manufacturing Co., Continental Industrial Engineers, Inc., Despatch Oven Co., Eclipse Fuel Engineering Co., Fieser and Lundt, Inc., The Gas Machinery Co., Charles A. Hones, Inc., The C. M. Kemp Manufacturing Co., National Machine Works, The North American Manufac-

turing Co., The Partlow Corp., The Selas Co., Sellers Engineering Co., and Surface Combustion Corp.

To accomplish the dual job of (1) marshalling all the gas industry forces at the National Metal Show for cooperative effort during the week and (2) paying homage to the metal industry press for its fine cooperation in industrial gas publicity and advertising activities, the annual Industrial Gas Breakfast of the National Metal Congress will be held by the Industrial Gas Section at 8:30 a.m. in the Lattice Room of the Hotel Statler, on Tuesday, October 22. *H. Carl Wolf,* Chairman of the Industrial Gas Section, will preside, and remarks will be offered by *C. E. Gallagher,* President, The East Ohio Gas Co., Cleveland; *Prof. Bradley Stoughton,* Lehigh University, Bethlehem, Pa., and Vice President-Elect, American Society for Metals; and *W. E. Steinwedell,* President, The Gas Machinery Co., Cleveland. Wind-up feature of the Breakfast program will be a special surprise event addressed to the editorial staffs of all trade, technical and business publications appealing to metal industry readers. All industrial gas men (representing utilities or manufacturers) who will be in or near Cleveland on October 22 are invited to attend this function in the interest of organizing their activities in connection with the Metal Show for maximum results.

The gas industry's participation in this leading event of the metal industry calendar is under the direct supervision of a Committee led by Karl Emmerling, Industrial Fuel Engineer, The East Ohio Gas Company.

B. C. Adams Elected President Gas Service Co.

Benjamin C. Adams was elected president and general manager of the Gas Service Company and president of the Kansas City Gas Company and the Wyandotte County Gas Company at a meeting of directors of all three companies, held in Kansas City, September 19. Mr. Adams formerly has served as vice-president and general manager of the Gas Service Company and vice-president of the other two companies.

The office of president of the three organizations has been vacant for some time following the resignation of Henry L. Doherty prior to his death.

During the time the vacancy caused by Mr. Doherty's resignation existed the Cities Service Company filed an application with the Securities and Exchange Commission for exemption under the Holding Company Act; and in compliance with the provisions of said Act, divorced itself from the voting control of all utilities which were then its subsidiaries, and created a voting trust, designating the City National Bank and Trust Company of Chicago as Trustee for these three companies.

At the regular annual meeting of the stockholders of the Gas Service Company, the City National Bank & Trust Company as Trustee, voting all the common stock formerly held by Cities Service Company, elected a new Board of Directors, among which were John Jirgal and L. S. Wescoat of Chicago. The meeting at which Mr. Doherty's vacancy was filled and Mr. Adams was elected president was the first meeting of such Board for the election of officers.

On the same date the regular monthly meeting of the Board of the Kansas City Gas Company and the regular quarterly meeting of the Board of the Wyandotte County Gas Company were also held, Mr. Jirgal and Mr. Wescoat as members of said respective Boards also attending. At these meetings Mr. Adams was elected president of the respective companies to fill the vacancy caused by Mr. Doherty's resignation and death.

Officers of the Gas Service Company now are Mr. Adams, president; Harry Warner, secretary and treasurer; J. R. Abercrombie, assistant secretary and assistant treasurer; and E. E. Laws, F. D. Young, and F. L. Blackburn, assistant secretaries.

Kansas City Gas Company officers are Mr. Adams, president; T. J. Strickler, vice-president and general manager; Mr. Warner, treasurer; M. J. Barry, secretary; W. G. Kelley, assistant secretary and assistant treasurer; Mr. Abercrombie, assistant treasurer; and Mr. Blackburn, assistant secretary.

Officers of the Wyandotte County Gas Company are Mr. Adams, president; W. H. McKenzie, vice-president and general manager; I. W. McKee, secretary and assistant treasurer; Mr. Warner, treasurer; Mr. Abercrombie, assistant secretary and assistant treasurer, and Mr. Blackburn, assistant secretary.

Sterling Pump Corporation Takes Over Turbine Pump Business of Roots-Connersville

Announcement has been made by the Roots-Connersville Blower Corporation of Connersville, Indiana, of the sale, effective September 1st, of its Turbine Pump business consisting of water systems, condensate units and turbine pumps for general industrial applications to the Sterling Pump Corp. of Hamilton, Ohio, who will manufacture and sell this line of pumps in the future under their name.

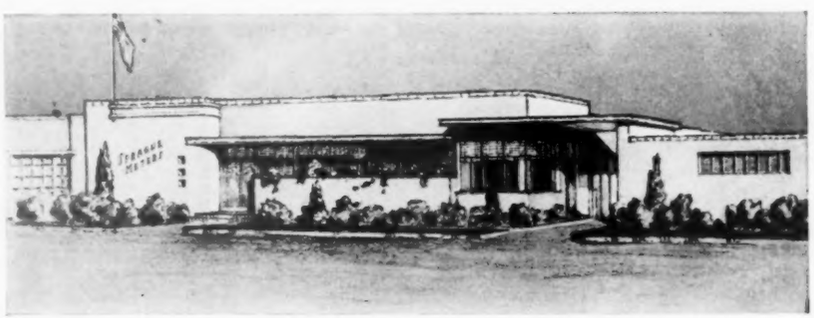
War Stimulates Gas Sales in Montreal

Reflecting increased gas consumption in the Montreal area for war purposes output continued to show improvement over last year. August production of gas by the company totalled 379,286,000 cubic feet, an increase of 8,001,000 cubic feet, or 2.15 per cent, over August 1939. For the eight months gas output was 3,314,034,000 cubic feet against 3,221,953,000 cubic feet in the corresponding period of last year, representing a gain of 92,081,000 cubic feet, or 2.86 per cent.

Montreal Light, Heat & Power Consolidated is not receiving the benefit, in net earnings, from increased sales this year, largely because of the sharply higher tax burden imposed on the company by the federal government, to help pay the costs of the war, John S. Norris, president of the company, revealed. Montreal power users, and the company itself, however, like all patriotic Canadians, added Mr. Norris, are contributing willingly their share of the costs of this war.

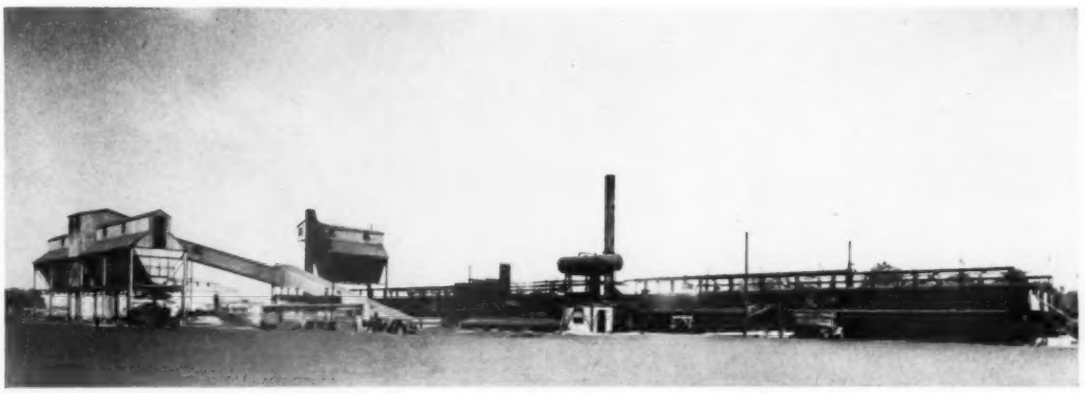
Asked to comment on recent agitation for removal of present exemption of publicly owned utilities from any share in the war costs, Mr. Norris said: "The publicly owned utilities, I am sure, are just as patriotic as the rest of us, and I have no doubt they also could have no objection to helping to contribute to the country's war costs. Certainly, if they were to be assessed for federal taxes, from which they are now exempt, on the same basis as privately-owned companies are assessed, there would accrue substantial revenues to the federal government, which would lessen the burden for many less able to pay. Recently, I note, business men and the press in communities where there is public ownership of utilities have been asking why the wealthy utility enterprises in their districts should not help pay for the war. As a Montrealer, I feel, and have felt, that federal tax assessments on use of electricity in one community, and no federal assessments whatever on use of electricity in competitive industrial centers, is discriminatory andd obviously unfair."

Sprague Meter Co., Los Angeles Branch and Warehouse



The many Pacific Coast friends of Sprague Meter Company attended the opening of their Los Angeles headquarters on September 21st. This new building, shown above, has 15,000 square feet of floor space and has modern proving room equipment, serving the Pacific Coast States as well as Colorado, Wyoming and Montana.

CURRAN-KNOWLES GAS AND COKE OVENS



Curran-Knowles plants are producing strong reactive coke from straight Low Volatile—High Volatile—High Moisture—High Volatile coals ***without blending.***

REACTIVE COKE

Is better for domestic and many metallurgical uses.

COAL CARBONIZING COMPANY

Bank of Commerce Bldg. **St. Louis, Mo.**

CRUSE-KEMPER COMPANY

STEEL PLATE CONSTRUCTION

AMBLER, PA.

GAS HOLDERS

HOLDER INSPECTION

RIVETED OR WELDED FABRICATION & ERECTION

TANKS, BINS, FLUES PURIFIERS, WELDINGS

VISIT OUR NEW BAR

HOTEL CHELSEA

SPECIAL WEEKLY RATES

Enjoy the Seashore

THE YEAR 'ROUND

Delightful in any season, Atlantic City is never nicer than right now. And whether you seek recreation or relaxation, the Hotel Chelsea is splendidly equipped to make your visit comfortable and pleasurable. Outside rooms • Sundeck • Beautiful dining room at ocean's edge • Superb cuisine • Sports • Entertainment • Magnificent Bar •

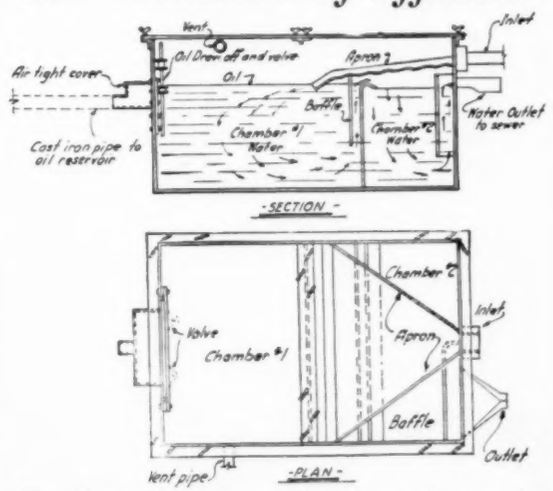
FROM **$6** Room, Bath, Meals

$3 Room Only & Bath Per Person, 2 in Room

ATLANTIC CITY

JOEL HILLMAN • J. CHRISTIAN MYERS • JULIAN A. HILLMAN

For Treatment of Effluent



The Morse Separator enables the separation and recovery of tar and oils from your effluent. It clarifies to a point which satisfies local and federal regulations on pollution.

Separation is effected by passing the raw effluent over a riffle board which separates oils and tar and passes clarified effluent to sewer.

Handles large volumes with relatively small units. Continuous in operation. No moving parts. Small labor cost. Successfully used by outstanding gas and oil companies and many industrials.

Bulletin 301 sent on request.

MORSE ENGINEERING INC.

15 Park Row **New York, N. Y.**

New Sales Training Method Introduced in Gas Industry

At the August 5 meeting of the A.G.A. Domestic Gas Range Committee held at the Palmer House, Chicago, Illinois, unanimous approval was given to one of the most unique, yet effective plans yet devised for the education of retail range salesmen. The CP gas range manufacturers of the Association of Gas Appliance and Equipment Manufacturers immediately recognized the value of the idea and have dedicated the time of their CP gas range field promotional staff of A.G.A.E.M. to the execution of this new sales program. This new field staff has also been equipped with sound recording equipment and has been thoroughly prepared to give this service to gas companies as schedules permit.

Salesmen have long known that their weak point has been their inability to observe themselves and to judge their own weaknesses and strengths as they can judge the sales effectiveness of their associates. In recognition of this longfelt need, A.G.A. and A.G.A.E.M. now offer to the gas industry a personalized sales training service that enables each salesman to hear himself as others hear him.

CP Audio-Training Service has the advantage of being a method of training based on each individual's own experience rather than the experience of others. It is the first practical method of self-training for better sales presentations. The focal point of all sales effort is the presentation made to the customer. Supervisors and sales managers can explain to each salesman how his sales presentation might be strengthened, yet when the salesman can see and hear for himself from a presentation he has made how that presentation may be strengthened, then he is in a better position to improve his sales effectiveness than ever before.

CP Audio-Training is accomplished through the use of voice recording equipment. Each salesman prepares a five-minute sales presentation that he believes incorporates the strongest selling points of CP modern gas cookery. In collaboration with an A.G.A.E.M. Sales Counselor this presentation is then recorded. As soon as this recording is completed, the presentation is played back to the salesman as one would play an ordinary phonograph record. The salesman hears his own voice with all of its many inflections. His own approach and sales story of the advantages and benefits of a CP range are presented to him as if he were the customer.

A salesman has the opportunity to decide whether, if he were in the customer's place, he would buy a CP range on the merits of the presentation made. Experience in other lines of industry has shown that Audio-Training is welcomed by the salesmen. They like it because they immediately recognize that it is a practical method of helping each one individually in satisfying the problems that he is faced with in improving his sales story. The interest aroused is so great that salesmen are not only willing, but anxious to spend the time necessary to prepare and write the presentation which they recorded. CP Audio-Training appeals for other reasons; it offers each man the opportunity of developing a specific sales presentation particularly fitted to the individual's personality—one that meets the local conditions and one that considers each man's selling experience. The salesman has the opportunity of using his own initiative and of employing those sales principles he has found to be most successful. Then, too, everyone likes the idea of having his own voice recorded, of having a personal recording that he may review at a later date as a further means of self-improvement. CP Audio-Training is unique, it is new, and it is the first method of sales training to have a strong appeal to the person enrolled.

A.G.A. and A.G.A.E.M. offer CP Audio-Training to all residential sales personnel of all gas companies in the United States and Canada. This service is being announced to all gas companies through the medium of the CP Fall program portfolio (The American Homemaker Speaks). Simple registration forms are included in this portfolio. Every gas company registering its sales personnel for this service receives a complete kit of CP literature and material for each member of the sales personnel who is enrolled.

The Association of Gas Appliance and Equipment Manufacturers recommend that CP Audio-Training be conducted on a competitive basis. Each gas company is asked to explain to its sales organization that each person enrolling is going to be entered in a contest based on the preparation of the best sales presentations. After each person is enrolled, has completed his or her recording, A.G.A.E.M. advises that a meeting of all enrolled be held, at which time all recordings made are played. A vote is then to be taken by those attending the meeting to determine the winning sales presentations.

According to L. C. Ginn, Chairman of the CP Sales Management Committee of the A.G.A.E.M., "Here's just one of the reasons why 'For Everyone in 'Forty-One It's CP'."

A. D. MacLean Elected Vice President of Pittsburgh Equitable Meter Co.

Colonel W. F. Rockwell, President of the Pittsburgh Equitable Meter Company, has announced the election of Mr. A. D. MacLean to the Vice Presidency of the Company.

A. D. MacLean

Mr. MacLean is a graduate of the School of Engineering, Harvard University. Immediately upon receiving his degree, he enlisted in the Army Air Service Corps, serving therein until the Armistice in the World War. His first connection in industry was with the Ashton Valve Company of Cambridge, Mass., as Chief Draftsman. He later accepted a position with the Engineering Department of the New Departure Division of General Motors Corporation and was subsequently promoted to become Assistant Chief Engineer.

In 1926 Mr. MacLean joined the EMCO organization as Chief Engineer, which position he has filled until the present date.

Mr. MacLean is well known in industry as an author and lecturer on technical subjects.

Gustave Fontaine Becomes Assistant Treasurer

Gustave Fontaine has been appointed to the post of assistant treasurer of Montreal Light Heat & Power Consolidated, it was announced recently by John S. Norris, president of the company.

He was an employee of the local utility for twenty-two years.

Florida-Georgia Gas Meters Association Conference

The Florida-Georgia Gas Meters Association held their fall Sales Conference at Gainesville, Florida, September 13-14. This meeting was strictly for salesmen, who were divided into three groups, each speaker appearing three times a day.

Bob Caniff of Servel, Inc., spoke on refrigeration and C. M. Rohde, Jr., of the Ruud Manufacturing Co., on water heating. Herbert Watson of the Association of Gas Appliance Equipment Manufacturers also addressed the Conference.

The salesmen were allowed a thirty minute round table discussion after each talk and obtained a great deal of information out of the meeting.

Luncheon speaker was Walter J. Matherly, Dean of the University of Florida, who highly entertained the group with his sparkling wit.

A quiz program was put on by H. Stuart Johnston, Sec.-Treas. of the Association, which was educational along with plenty of fun. Cash prizes were awarded for correct answers.

The business session was followed by a barbecue and chicken pilau at the farm of Mr. I. J. Wynn, Jr., President of Gainesville Gas Company. The scene presented several hundred people, huge barbecue pits covered with beef, hogs and goats, enormous kettles of chicken and rice, with a back drop of a gigantic pile of pine boughs blazing under a full moon, in a tropical setting. Visitors from the north declared this to be an ideal way of conducting a gas meeting.

President Littlefield and Convention chairman J. W. Owen conducted the conference in a highly satisfactory way.

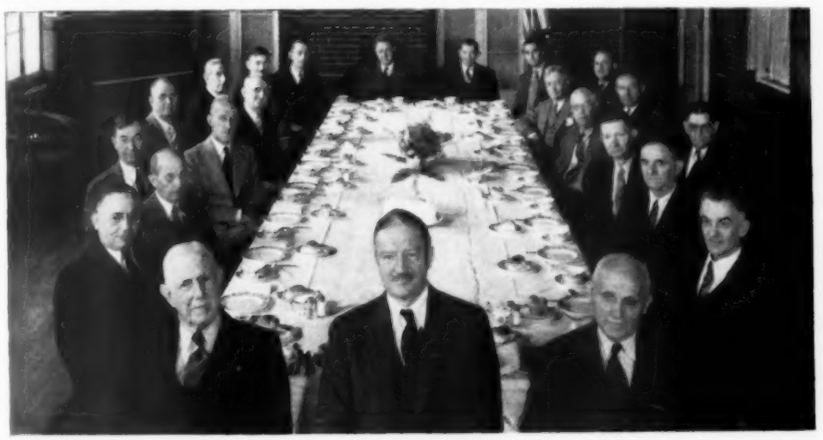
Appalachian Meter School Draws Record Attendance

The 1940 Gas Measurement Short Course held at West Virginia University, August 19, 20 and 21 drew a record attendance with 446 gas men from all over the Eastern and Southern United States registered. This course, jointly conducted by the University and the Public Service Commission of West Virginia, will from now on also be sponsored by the American Gas Association. This sponsorship was announced by Walter C. Beckjord, President of the Association, who was one of the speakers. Other speakers at the general sessions included Dr. C. E. Lawall, President of the University; C. R. Bellamy, Columbia Engineering Corporation; Dr. Paul Price, West Virginia Geological Survey; A. J. McClellan, Manufacturers Light and Heat Company; C. C. Phillips, Ohio Fuel Gas Company; Thomas R. Weymouth, Columbia Gas and Electric Corporation; John Diehl, American Meter Company and Ray W. Hitchman, United Fuel Gas Company, who served as chairman of the Meter School Committee.

Meetings for the entire registration were held during the forenoon of each day. Speakers covered the field of measurement and control in a broad sense so as to be applicable and of interest to everyone attending the school. The afternoon sessions were devoted to classroom study of specific equipment and problems relating to gas measurement and regulation. These classes were conducted for the most part by engineers from the various equipment manufacturers.

Another Veteran Meter Maker Celebrates Fiftieth Anniversary

A luncheon was given September 13 at the Penn Lincoln Hotel, Wilkinsburg, in honor of Joseph Klein, a foreman of Pittsburgh Equitable Meter Company's meter shop, who rounded out fifty years of continuous service for the company. Fellow employees and officials of the company made up the guest list. Among those who paid tribute to Mr. Klein were Colonel W. F. Rockwell, President of Pittsburgh Equitable, and Horace Chrisman, a veteran who completed 50 years of service two years ago. Mr. Klein was presented with a purse as a tribute for his service record.



In the foreground, left to right: Horace Chrisman, Colonel W. F. Rockwell, Joseph Klein.

Servel Employees to be Re-employed Following Military Service

Servel, Inc., has notified its employees that their jobs will be guaranteed for them after required service in the National Guard or Army under the present mobilization act.

The notice reads: "When Servel employees enter the government service through the proposed mobilization of the National Guard or as the result of any plan of selective service which may be adopted, they will retain their seniority status with Servel, Inc., and upon release from government service, such employees will be re-employed at their former or similar assignments as soon thereafter as conditions existing at that time may permit."

COMMITTEE IN CHARGE OF 1940 APPALACHIAN GAS MEASUREMENT SHORT COURSE

Among the men directing the program for West Virginia University's third annual gas measurement short course were:

Front, left to right—G. R. Spindler, Faculty Member, West Virginia University; W. A. Ehlers, Reynolds Gas Regulator Company; R. W. Hitchman, United Fuel Gas Company, chairman of the school; A. D. MacLean, Pittsburgh Equitable Meter Company; B. P. Stockwell, Public Service Commission of West Virginia; G. W. Harr, Monongahela West Penn Public Service Company.

Standing—J. E. Overbeck, Columbia Engineering Company; W. A. Staab, Faculty Member, West Virginia University; F. N. Wolf, Equitable Gas Company; A. F. Kraus, Peoples Natural Gas Company; R. O. Borden, American Meter Company; E. M. Lockwood, Sprague Meter Company; K. K. King, Manufacturers Light and Heat Company; J. W. Allison, Monongahela West Penn Public Service Company; T. K. Spalding, Owens-Libby-Owens Gas Department; Lawrence Hunter, Columbian Carbon Company; A. M. Brooks, Chaplin-Fulton Manufacturing Company; H. J. Wagner, Public Service Commission of West Virginia, and D. L. McElroy, Director of the School of Mines, West Virginia University.

Gas Industries' Co-ordinator Honored at New York World's Fair

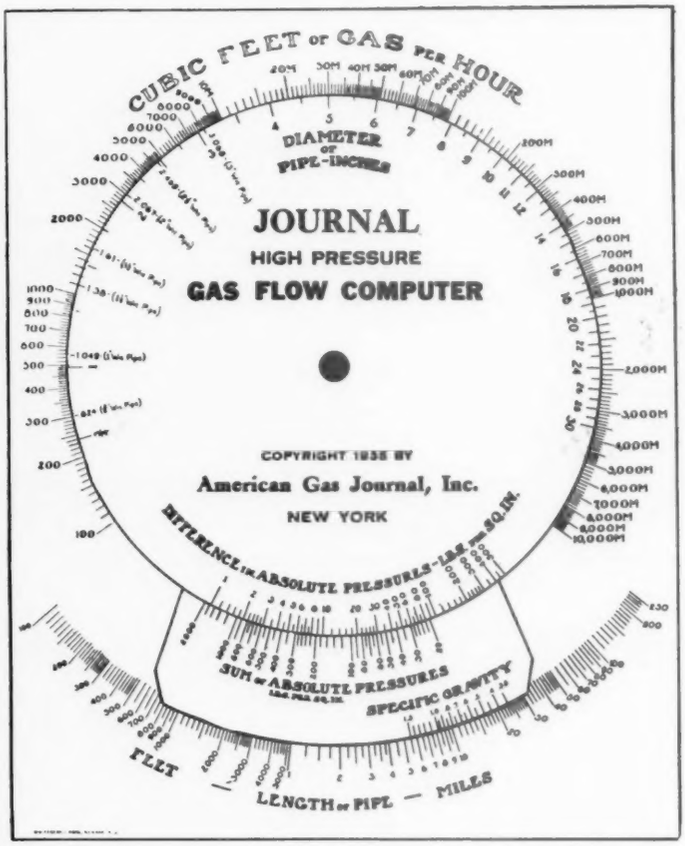
Stanley B. Finch, co-ordinator for the gas industries at the New York World's Fair, has been elected secretary-treasurer of "The Pavilionaires, Inc.," a newly organized group which will maintain on a permanent basis the functions and work of the present World's Fair Exhibitors Association. This was announced recently following the incorporation of the new organization.

The object of The Pavilionaires is "to preserve and add to the knowledge gained at this and other major expositions, and to make it available to business, industry and managements of future fairs." Col. Sherman A. Snapp, director of the Standard Brands Building at the World's Fair, was named the first president.

During the past three years Mr. Finch has served as assistant to Hugh H. Cuthrell, president of Gas Exhibits, Inc., in the capacity of co-ordinator and liaison official between the management group and the World's Fair Corporation. He was active in the promotion of his industry at the Fair which resulted in the extensive use of gas throughout the exposition and the many installations of gas appliances and equipment in the Fair's buildings.

Mr. Finch is associated with the Brooklyn Union Gas Co., Brooklyn, N. Y.

"Journal" Gas Flow Computers



New Improved Gas Flow Computers now available of durable celluloid, encased in a convenient leatherette cover with complete instructions.

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High Pressure Computer Range:

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Diameter of Pipe Inches ¾-30
Difference in Absolute Pressure—Lbs. per sq. in. 1-500
Sum of Absolute Pressures—Lbs. per sq. in 2000-20
Specific Gravity 1.5-.35
Length of Pipe—Feet 100-5000
Length of Pipe—Miles 1-250

Low Pressure Computer Range:

Cu. Ft. of Gas Per Hour—10 to 500 M
Pipe Diameter ¾" to 48" (including standard and actual weight up to 4")
Pressure Loss Inches .01-10.
Length of Pipe—Feet 30-30,000
Specific Gravity 1.5-.35
Constants 1400-1000

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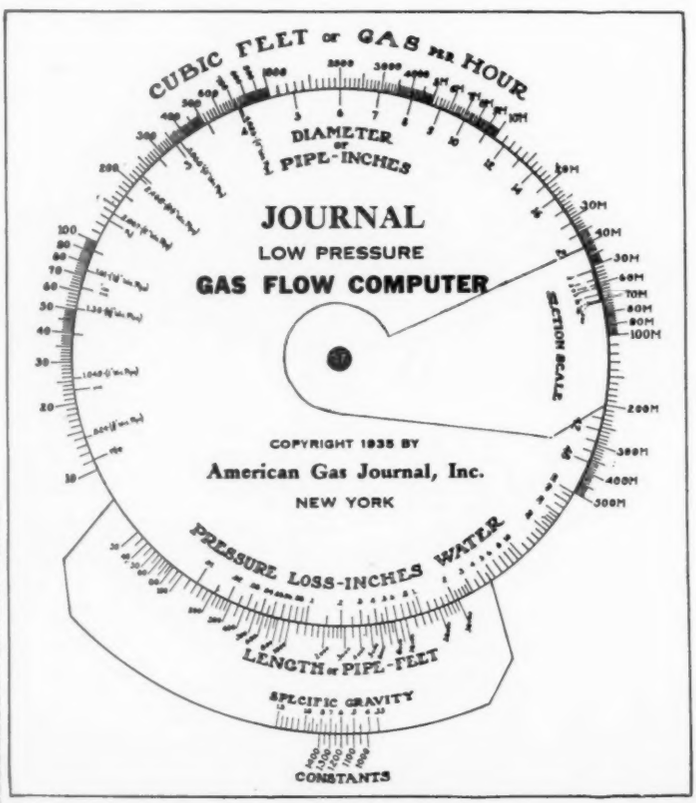

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Pyridine, Valuable Drug, Taken From Coke Oven Gas

Among the most potent weapons furnished the medical profession in many years in its constant war on disease is the newly discovered sulfapyridine and its compounds and derivatives. It has been found especially efficacious in treatment of pneumonia, and has already literally saved hundreds of lives. An increased supply of pyridine, from which sulfapyridine, is made, has been made available recently by perfected processes in recovering it from coke oven gas.

"Coke oven gas now appears to be the most important source of pyridine available," says the superintendent of the Republic Steel Company's by-product coke plant, where the process was perfected, who is quoted by the New Jersey Public Utility Information Committee. In one month, recently, 40,000 pounds were recovered in two of the Republic plants. Originally pyridine was just a bothersome impurity that had to be eliminated.

17½ Million Cubic Feet of Gas Used at Glass Center in New York World's Fair

When the glass furnace in the million-dollar Glass Center at the World's Fair is shut down with the close of the exposition, the glass industry's exhibit will have consumed more than 17,500,000 cubic feet of gas.

The Glass Center furnaces require up to 2,700 degrees F., burning day and night. Gas also is used in the making of fiberglas cloth in the Glass Center, also a continuous operation from start to finish of the Fair.

Virtually all of the major uses of gas fuel in the making of glass, with the exception of annealing, are demonstrated at the Glass Center. Working displays show gas being used for bending, burning off, blowing, rolling, molding, drawing, reheating and free burning, and these various processes demonstrate the manner in which gas fuel serves this great industry.

The Glass Center is sponsored by the Owens-Illinois Glass Company, Pittsburgh Plate Glass Company, Corning Glass Works and the Owens-Corning Fiberglas Corporation.

Safety Record

One million man hours without a lost time accident was the mark passed at close of work September 6 by employes of the Monroe (La.) district, United Gas Pipe Line Company, J. Grady Hicks, district manager, announced recently.

Not since August 26, 1938, has United's safety flag been lowered to signify a disabling injury in the district, and during that time as many as 600 men have been employed simultaneously. Average number of employes in the district is 300, Mr. Hicks said.

Recognition of the safety record was given at a Victory barbecue September 7, at Monroe, at which N. C. McGowen, president of the United and associated companies, presented a safety award plaque honoring the district for winning the 1939 safety contest sponsored by the company. More than 1,000 persons were present.

Lee Holtz Retires From Active Duty

Because of a long illness which was further aggravated by an injury sustained during vacation, Mr. Lee Holtz, General Superintendent of Distribution, Southern California Gas Company, relinquished his duties on September 30, 1940, according to an announcement by the company. Mr. Holtz has been associated with the company since 1922.

Mr. Elting Henderson will assume the duties of General Superintendent of Distribution, in charge of the Street Department, the Meter Department and miscellaneous matters. Mr. Carl A. Renz will become General Superintendent of Customer Service for the distribution department.

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Obituary

FRANCIS X. ENGEL

Francis X. Engel, 87 years old, vice president, secretary and general superintendent of the Elizabethtown Consolidated Gas Company, Elizabeth, N. J., by which he has been employed sixty-eight years, died after a brief illness. Mr. Engel, who saw the city grow from a small community of modest homes to a great industrial center, worked daily at his desk until the inception of his illness. He had held several public offices and was a lifelong resident of this city.

At the age of 19 Mr. Engel obtained a position with the Elizabethtown Gas Light Company, now the Elizabethtown Consolidated Gas Company. His mother feared the job would not be permanent since the day was Friday, the thirteenth of April, 1872. He had previously worked as a clerk in the office of the municipal receiver of taxes here, taking this employment when he was only 15 years old.

The gas company had been in existence but sixteen years when he entered its service. It had a small plant on the Elizabeth River.

Francis X. Engel

His long service with the gas company was noteworthy, but seldom did he allow any observance of an anniversary. One of these few occasions was the sixty-fifth anniversary in 1937, when his fellow-employees honored him at a dinner. He was presented with a gold watch and speeches were made by former U. S. Senator Hamilton F. Kean, by Joseph A. Brophy, who then was Mayor, and Capt. John Kean, president of the company.

V. B. SANDERS

V. B. Sanders, assistant to the vice president in charge of finance and accounting, Public Utility Engineering and Service Corporation, died September 23d at St. Francis Hospital in Evanston, Illinois, after a long illness.

Mr. Sanders has been associated with the Standard Gas and Electric Company system since 1910, when he was first employed by Oklahoma Gas and Electric Company as assistant to the auditor in Oklahoma City. In November of 1917, he was transferred to Northern States Power Company, serving successively as division accountant at Stillwater, Minnesota, division accountant at Fargo, North Dakota, and chief traveling auditor of the company, with headquarters in the Minneapolis office. In July of 1923, he came to Chicago as assistant general auditor of the organization with which he was connected at the time of his death, and, since 1929, he has been assistant to the vice president in charge of finance and accounting.

He was well known throughout the public utility industry for his work in public utility accounting procedures and practices. He was fifty-three years old.

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Pipe Corrosion and Coatings

by

Erick Larson

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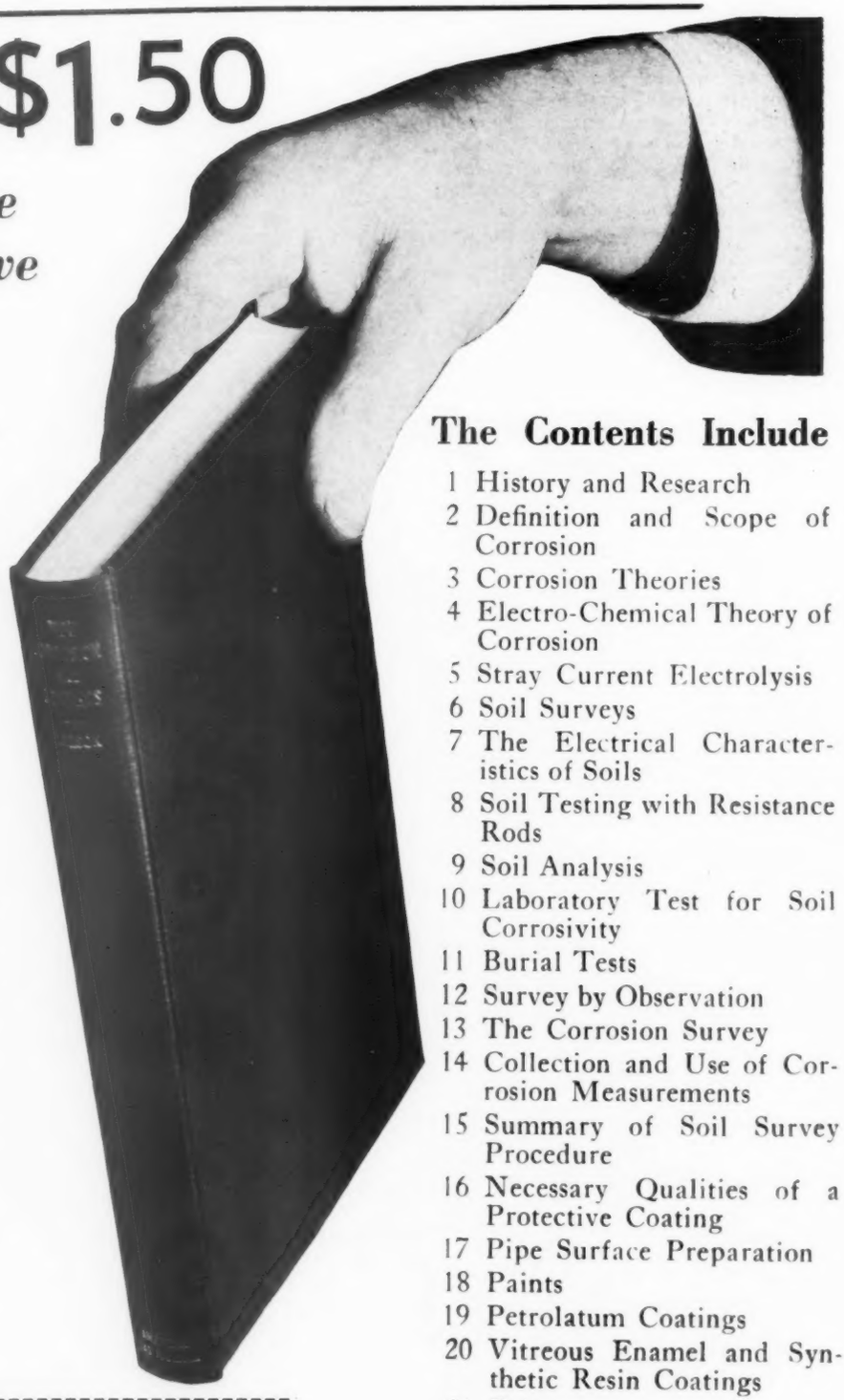

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3 Corrosion Theories
4 Electro-Chemical Theory of Corrosion
5 Stray Current Electrolysis
6 Soil Surveys
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8 Soil Testing with Resistance Rods
9 Soil Analysis
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11 Burial Tests
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13 The Corrosion Survey
14 Collection and Use of Corrosion Measurements
15 Summary of Soil Survey Procedure
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The Raleigh Gas Company, Raleigh, N. C.

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Domestic Gas Appliances by A. M. Apmann. Gives practical working knowledge of the technology of appliances and characteristics of fuels. Ranges, Water Heaters, House Heating and Refrigeration are fully discussed. 238 pages, many illustrations, stiff cover. Special close-out price, 50c. American Gas Journal, 53 Park Place, New York.

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DELIGHTFUL GRILL BAR

Randall M. (Duffy) Lewis, Mgr.

Gas Flares

(Continued from page 46)

and each pilot line, so as to eliminate the dangers of any disturbance.

Gas consumption is from 900 to 1000 C.F. per hour for each of the 12 burners.

Gas fuel also serves at the Aquacade, during cold weather, to heat the 500,00 gallons of water in the gigantic pool. Two 20 h. p. Bryant hot water boilers, consuming 3,500 cubic feet of gas per hour when operating, maintain the pool temperature at 74° F. In addition, gas-fired water heaters supply all the hot water required in the showers and dressing rooms.

The hot water for these showers and the wash rooms is being supplied by two No. 8 Ruud Water Heaters, each being connected to a 500-gallon storage tank. The total consumption of these heaters is 1500 cu. ft. per hour. During cold weather a Humphrey heat tower also supplies the dressing rooms with an abundance of warm air.

Success with gas-fired equipment at New York World's Fair decided Billy Rose in favor of the same fuel for the Aquacade that he sponsored this year at the Golden Gate Exposition. There one boiler of about 70 horsepower has been installed, a boiler so long that it had to be put in place under the stage before actual work on the pool could begin.

Air Conditioning

(Continued from page 52)

In the new home, you have a free hand in planning duct work and for the activation exhaust and both these can be taken care of in the new home without any extra expense. Thus, the equipment cost only is a factor and this cost might be well under $1,000 or $1,500, which cost might even include a shallow well.

The same element of pride and comfort, however, appeals to the owner well established in a home already built and such homes are also prospects.

The sharp edge of the wedge which will crack this vast air conditioning market for gas is for you to get your company to do these three things—NOW—

1. **Appoint a promotional engineer as a full time specialist.**
2. **Set a small but definite quota.**
3. **Appropriate a budget for air conditioning promotion.**

To us all, comfort and industrial air conditioning means new opportunities, new markets for gas in the summer, new possibilities of bigger gas load, new opportunities for salesmen and sales organizations, and new places for new men to make their marks.

Special Gas Number of "Saturday Night" a Good Will Builder

"Saturday Night" is a Toronto weekly publication, devoted to Canadian affairs—political, social, literary and financial. Each of these features have their following. It is not, as a rule, its practice to publish special issues featuring any product or industry.

Naturally, since the paper is published in Toronto, the local Consumers' Gas Company is first asked for support which is freely given. Besides purchasing space, the Sales Promotion Department of that Company, furnishes all the material possible for the editorial pages.

In the advertising pages, many manufacturers give this special number their support, as do many of the other distributors of manufactured and natural gas. Following this number of August 31st, "Saturday Night" is looking forward to bigger and better issues on this important subject and, at present, is considering more suitable dates for their publication.

Ruthenburg Active On National Defense Committee

Louis Ruthenburg, president of Servel, Inc., of Evansville, Ind., has been appointed Vice-Chairman of the Evansville National Defense Committee which consists of nearly 200 of the city's leading citizens. Mayor W. H. Dress is honorary chairman, and C. B. Enlow, president of the Evansville National City Bank, is chairman.

The Committee is made up largely of the same group of citizens who comprised the flood committee appointed in 1937 when Evansville was so disastrously affected by the unprecedented rise of the Ohio River.

The main aims of the National Defense Committee have been outlined as follows:

1. Cooperation in raising a unit of the state militia, or home guard, after the present Indiana National Guard is sworn into the federal service.

2. Cooperation in combating subversive activities that may develop in the community.

3. Extending aid and encouragement to soldiers and drafted men after they are in camp.

4. Help in the recruiting of guard units in Evansville to full strength before going into the federal service.

Sales Representatives of Pittsburgh Coal Company and Affiliates gathered during their annual dinner at Pittsburgh on September 18th.

Pittsburgh Coal Co. Sales Meeting

Pittsburgh Coal Company held its annual official dinner at the Duquesne Club, Pittsburgh, on September 18th, bringing together its Canadian and American sales organizations and affiliates for the largest joint-meetings the company has ever held.

Mr. Earl C. Robertson, Vice President, officiated as Toastmaster. Speakers at the dinner included Mr. A. K. Oliver, Chairman of the Board of Directors; Mr. J. B. Morrow, President; Mr. E. F. Rumpf, Vice President; and Mr. Don Rose, Director and General Counsel.

During the latter part of the week, the visiting officials were conducted on inspection tours of Pittsburgh Coal's large modern mines and preparation plants in the Western Pennsylvania area.

Refractories. A 20 page pamphlet issued by American Refractories Institute, Pittsburgh, covers the history, research and tests conducted by the Institution. With many illustrations, it is a brochure of much interest to all production men associated with the gas industry. Copy may be had by addressing Mellon Institute 4400 Fifth Avenue, Pittsburgh.

It stays tight

When changes in operating requirements of gas distribution systems called for better joints, cast iron pipe makers adapted the time-tried "stuffing-box" principle to the construction of a leak-proof mechanical joint. Today mechanical-joint cast iron pipe, as developed by our members, has proved its efficiency in hundreds of installations. It is rapidly becoming standard construction in gas distribution systems.

Look for the "Tyler-Lock" registered trade mark. Cast iron pipe is made in diameters from 3 in. to 84 inches.

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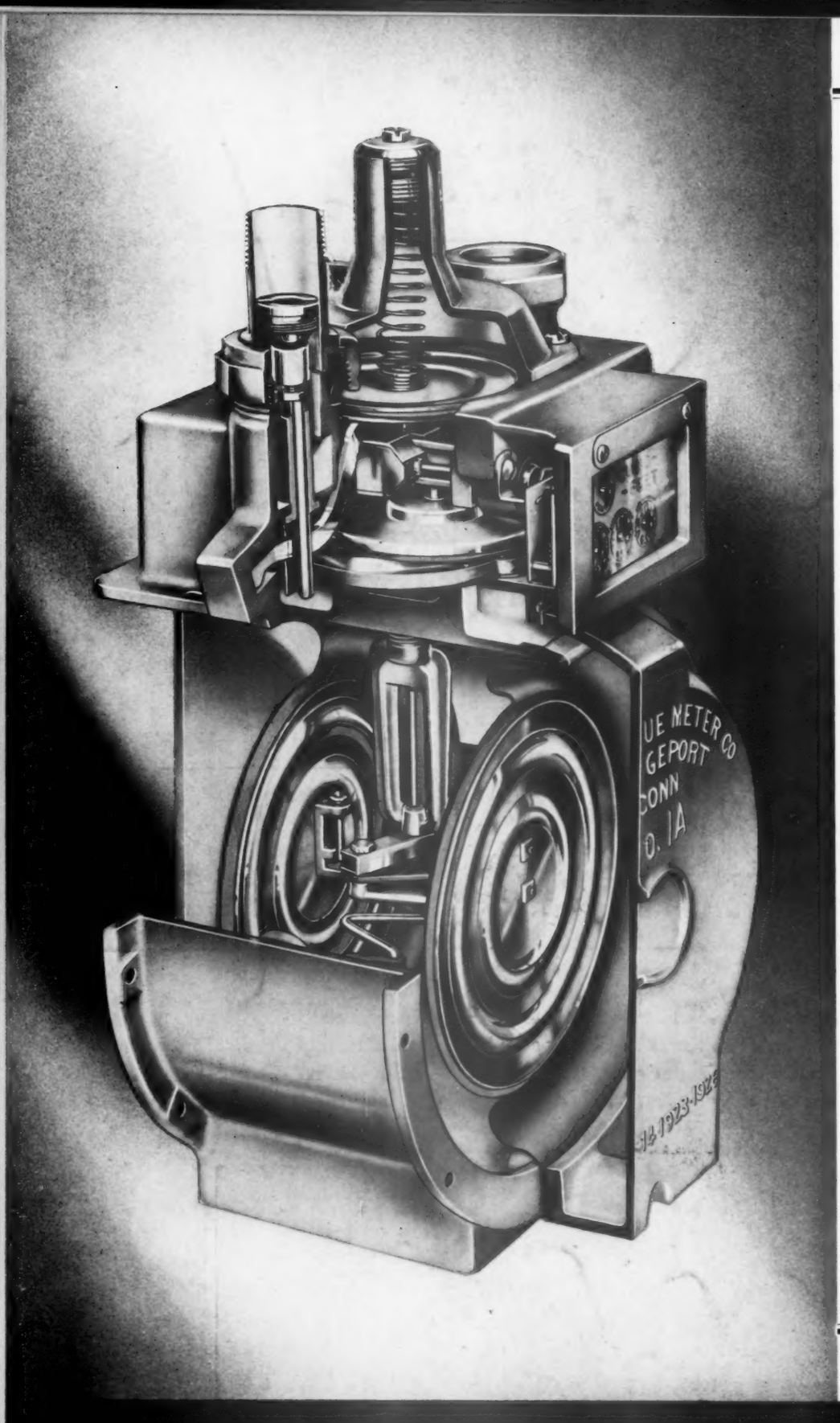
CAST IRON PIPE

THE STANDARD MATERIAL FOR UNDERGROUND MAINS

Assembling any of the mechanical joints made by CIPRA members is a simple, swift operation with common labor and a single tool. These joints vary in design but are all based on the stuffing-box principle and they are all bottle-tight.



ANNOUNCING

That we are prepared to furnish VULCAN diaphragms in our full line of meters and regulators. Factory and field tests over several years offer sufficient evidence for our endorsement.

ADVISING

That the 1A Combination Meter-Regulator with Sprague Vulcan diaphragms now, more than ever, commends itself to the critical buyer for performance and investment value.

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